

=> file reg

FILE 'REGISTRY' ENTERED AT 17:19:04 ON 09 JAN 2003
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STRUCTURE FILE UPDATES: 8 JAN 2003 HIGHEST RN 478480-50-1
DICTIONARY FILE UPDATES: 8 JAN 2003 HIGHEST RN 478480-50-1

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when
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Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP
PROPERTIES for more information. See STNote 27, Searching Properties
in the CAS Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d his

(FILE 'HOME' ENTERED AT 16:15:43 ON 09 JAN 2003)

FILE 'HCAPLUS' ENTERED AT 16:17:23 ON 09 JAN 2003

L1 963 S NISHIURA ?/AU
L2 9921 S KONO ?/AU
L3 89126 S WATANABE ?/AU
L4 6 S L1 AND L2 AND L3
SEL L4 1-6 RN

FILE 'REGISTRY' ENTERED AT 16:17:54 ON 09 JAN 2003

L5 95 S E1-E95
L6 22 S L5 AND B/ELS
L7 10 S L6 NOT PMS/CI

FILE 'LREGISTRY' ENTERED AT 16:21:42 ON 09 JAN 2003

L8 STR
L9 STR

FILE 'REGISTRY' ENTERED AT 16:38:06 ON 09 JAN 2003

L10 18 S L8 AND L9
L11 STR L8
L12 14 S L11 AND L9
L13 277 S L11 AND L9 FUL
SAV L13 WEI231/A

FILE 'HCA' ENTERED AT 17:04:54 ON 09 JAN 2003

L14 155 S L13
 L15 393479 S ELECTROLY?
 L16 176076 S BATTERY OR BATTERIES OR (ELECTROCHEM? OR ELECTROLY? OR
 L17 QUE 52/SX,SC OR 72/SC,SX
 L18 0 S L14 AND L15
 L19 0 S L14 AND L16
 L20 3 S L14 AND L17
 L21 42764 S NONAQ# OR NONAQUEOUS? OR NONWATER? OR NONH2O OR NON(2A)
 L22 0 S L14 AND L21

FILE 'REGISTRY' ENTERED AT 17:07:34 ON 09 JAN 2003

L23 34866 S (C(L)H(L)B)/ELS AND 2<B
 L24 5991 S L23 NOT 4<NR
 L25 9344 S L23 AND 3-6/B
 L26 4036 S L24 AND L25

FILE 'HCA' ENTERED AT 17:13:07 ON 09 JAN 2003

L27 2619 S L26
 L28 26 S L27 AND L15
 L29 6 S L28 AND L21
 L30 16346 S (POLYM? OR COPOLYM? OR HOMOPOLYM? OR TERPOLYM? OR RESIN
 L31 7 S L27 AND L30
 L32 10 S L28 AND (L16 OR L17)
 L33 152 S L14 NOT L20
 L34 14 S (L29 OR L31 OR L32) NOT L20

FILE 'REGISTRY' ENTERED AT 17:19:04 ON 09 JAN 2003

=> d l13 que stat

L9 STR

			@7	@9	@12	
G1 1	G1 3	G1 5	B	B~X	B~C	X~B~X
			E2	E1 10	E1 13	15 @16 17

Page 1-A

X~B~C	C~B~C	C⊗B⊗C
21 @22 23	25 @26 27	29 @30 31

Page 1-B

VAR G1=7/9/12/16/22/26/30

NODE ATTRIBUTES:

HCOUNT	IS E2	AT	7
HCOUNT	IS E1	AT	9
HCOUNT	IS E1	AT	12
NSPEC	IS RC	AT	13
NSPEC	IS RC	AT	23
NSPEC	IS RC	AT	25
NSPEC	IS RC	AT	27
NSPEC	IS RC	AT	29
NSPEC	IS RC	AT	31

CONNECT IS E1 C AT 7
CONNECT IS E2 C AT 9
CONNECT IS E2 C AT 12
CONNECT IS E3 C AT 16
CONNECT IS E3 C AT 22
CONNECT IS E3 C AT 26
CONNECT IS E1 C AT 30
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE
L11 STR

B—C B 4 B 6
1 2

NODE ATTRIBUTES:
NSPEC IS RC AT 1
NSPEC IS RC AT 2
NSPEC IS RC AT 4
NSPEC IS RC AT 6
CONNECT IS X3 RC AT 1
CONNECT IS X3 RC AT 4
CONNECT IS X3 RC AT 6
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE
L13 277 SEA FILE=REGISTRY SSS FUL L11 AND L9

100.0% PROCESSED 5375 ITERATIONS
SEARCH TIME: 00.00.02

277 ANSWERS

=> file hca
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FILE COVERS 1907 - 2 Jan 2003 VOL 138 ISS 2
FILE LAST UPDATED: 2 Jan 2003 (20030102/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d l20 1-3 cbib abs hitstr hitind

L20 ANSWER 1 OF 3 HCA COPYRIGHT 2003 ACS

135:242261 1,3-Bis[5-(dimesitylboryl)thiophen-2-yl]benzene and 1,3,5-tris[5-(dimesitylboryl)thiophen-2-yl]benzene as a novel family of electron-transporting hole blockers for organic electroluminescent devices. Kinoshita, Motoi; Shirota, Yasuhiko (Department of Applied Chemistry, Faculty of Engineering, Osaka University, Suita, 565-0871, Japan). Chemistry Letters (7), 614-615 (English) 2001. CODEN: CMLTAG. ISSN: 0366-7022. OTHER SOURCES: CASREACT 135:242261. Publisher: Chemical Society of Japan.

AB A novel family of electron-transporting hole blockers, 1,3-bis[5-(dimesitylboryl)thiophen-2-yl]benzene and 1,3,5-tris[5-(dimesitylboryl)thiophen-2-yl]benzene (TMB-TB), were designed and synthesized. They exhibit multiple redox behavior in electrochem. redn. and to readily form stable amorphous glasses with high glass-transition temps. >100.degree.. TMB-TB was proven to function well as a hole blocker in blue-emitting org. electroluminescent devices.

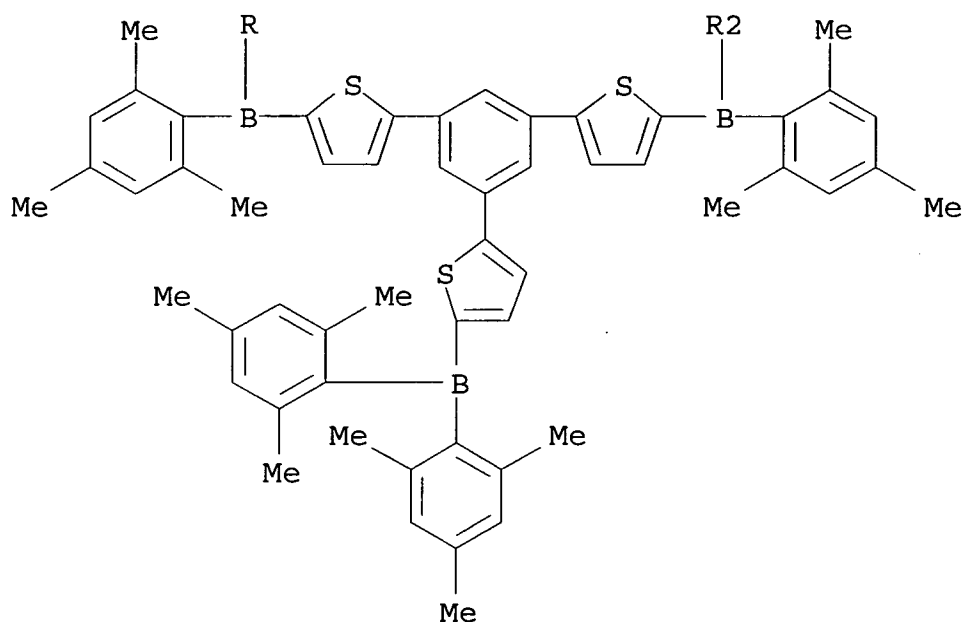
IT 355832-02-9P

(prepn., electrochem. redox, electroluminescence, glass-transition properties and use as electron-transporting hole blocker in org. electroluminescent devices)

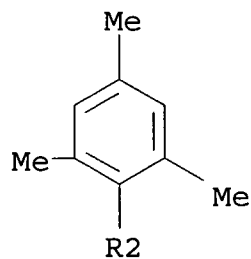
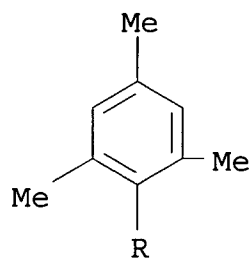
RN 355832-02-9 HCA

CN Borane, (1,3,5-benzenetriyltri-5,2-thiophenediyl)tris[bis(2,4,6-trimethylphenyl)- (9CI) (CA INDEX NAME)

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CC 29-4 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 72, 73, 74
IT 355832-02-9P

(prepn., electrochem. redox, electroluminescence,
glass-transition properties and use as electron-transporting hole
blocker in org. electroluminescent devices)

L20 ANSWER 2 OF 3 HCA COPYRIGHT 2003 ACS

133:135342 Tri-9-anthrylborane and Its Derivatives: New Boron-Containing
.pi.-Electron Systems with Divergently Extended .pi.-Conjugation
through Boron. Yamaguchi, Shigehiro; Akiyama, Seiji; Tamao, Kohei
(Institute for Chemical Research, Kyoto University, Uji/Kyoto,
611-0011, Japan). Journal of the American Chemical Society,
122(26), 6335-6336 (English) 2000. CODEN: JACSAT. ISSN: 0002-7863.
Publisher: American Chemical Society.

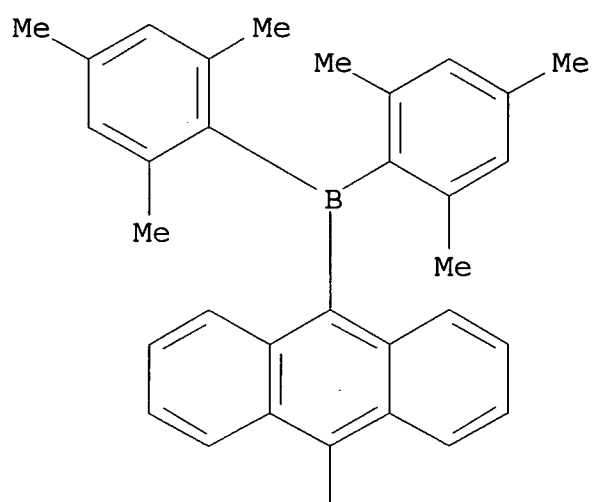
AB As a new family of .pi.-electron systems with such .pi.-conjugation,
trianthrylborane derivs. (tri(9-anthryl)borane, 9,10-bis[di(9-
anthryl)boryl]anthracene, tris(10-dimesitylboryl-9-anthryl)borane,
9,10-bis[bis(10-dimesitylboryl-9-anthryl)boryl]anthracene) are
reported, where three anthracene .pi.-systems are introduced on a B
atom. The compds. were studied by UV-visible spectroscopy and
cyclic voltammetry. In contrast to the amine cases, the
.pi.-conjugation would be divergently extended through the vacant
p-orbital on B in the LUMO level, thus realizing the high
electron-accepting properties. The crystal and mol. structures of
tri-9-anthrylborane were detd. by x-ray crystallog.

IT **286967-08-6P**, Tris(10-dimesitylboryl-9-anthryl)borane
286967-09-7P, 9,10-Bis[bis(10-dimesitylboryl-9-
anthryl)boryl]anthracene
(prepn. and cyclic voltammetry of)

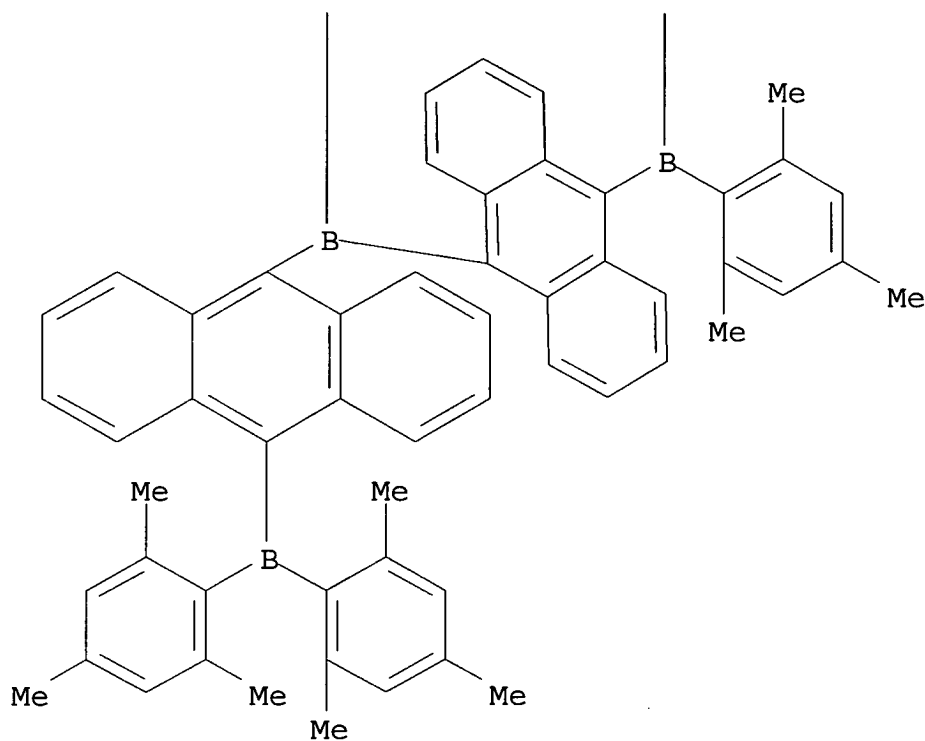
RN 286967-08-6 HCA

CN Borane, tris[10-[bis(2,4,6-trimethylphenyl)boryl]-9-anthracenyl]-
(9CI) (CA INDEX NAME)

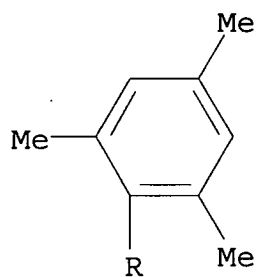
PAGE 1-A

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PAGE 2-A

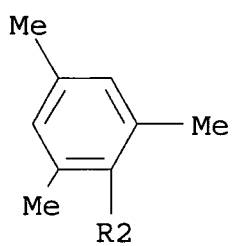
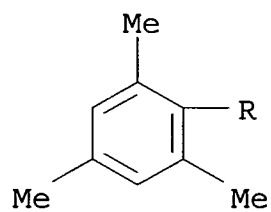


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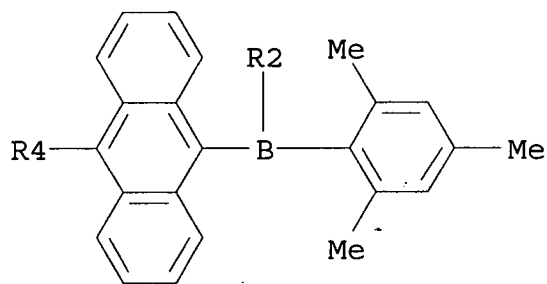
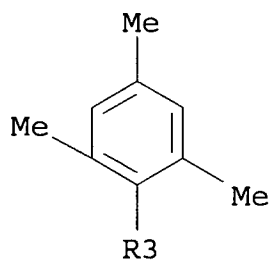


RN 286967-09-7 HCA
CN Borane, 9,10-anthracenediylbis[bis[10-[bis(2,4,6-trimethylphenyl)boryl]-9-anthracenyl]- (9CI) (CA INDEX NAME)

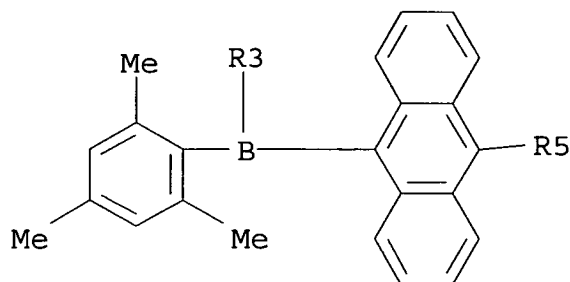
PAGE 3-A



PAGE 4-A



PAGE 5-A



CC 29-4 (Organometallic and Organometalloidal Compounds)

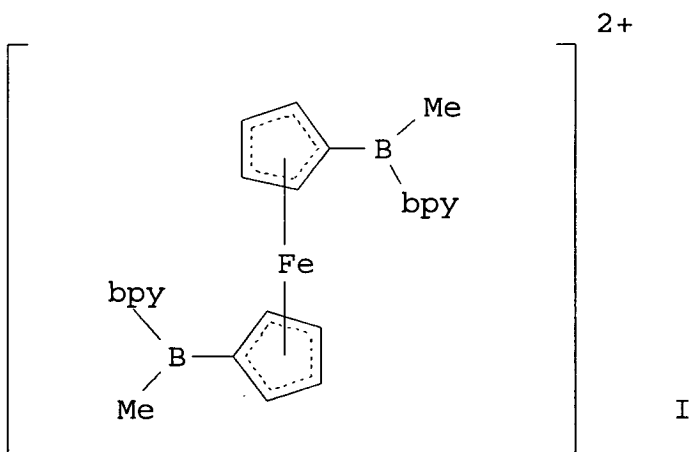
Section cross-reference(s): 22, 72, 75

IT 281668-49-3P, 9,10-Bis[di(9-anthryl)boryl]anthracene
286967-08-6P, Tris(10-dimesitylboryl-9-anthryl)borane
286967-09-7P, 9,10-Bis[bis(10-dimesitylboryl-9-anthryl)boryl]anthracene
 (prepn. and cyclic voltammetry of)

L20 ANSWER 3 OF 3 HCA COPYRIGHT 2003 ACS

127:278277 Multistep Redox Processes and Intramolecular Charge Transfer in Ferrocene-Based 2,2'-Bipyridylboronium Salts. Fabrizi de Biani, Fabrizia; Gmeinwieser, Thomas; Herdtweck, Eberhardt; Jaekle, Frieder; Laschi, Franco; Wagner, Matthias; Zanello, Piero (Anorganisch-Chemisches Institut, Technischen Universitaet Muenchen, Garching, D-85747, Germany). Organometallics, 16(22), 4776-4787 (English) 1997. CODEN: ORGND7. ISSN: 0276-7333. Publisher: American Chemical Society.

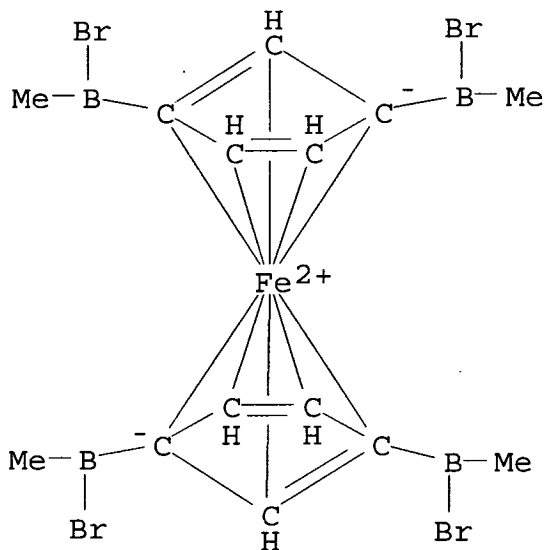
GI



AB A 1-step high-yield synthesis of donor-acceptor complexes [1A]X to [1D]X, [2A]X₂ (cation shown as I), and [4A]X₄ with one, two, and

four cationic $[B(R)bipy]^+$ acceptors ($R = Me, Br, OEt, NC_4H_8$; $X = Br, PF_6$; $bipy = 2,2'$ -bipyridine) covalently attached to a ferrocene donor is described. Apart from 2,2'-bipyridine, 1,10-phenanthroline and 2,2'-bipyrimidine also were used as chelating amines. With the exception of $R = Br$, water-stable compds. were obtained in all cases. In DMF soln. and under an inert atm., $[1A]PF_6$, $[2A](PF_6)_2$, and $[4A](PF_6)_4$ behave as reversible three-step redox systems, capable of storing three, five, and nine electrons, resp. In their cationic state, the complexes possess an intense purple color, which can be attributed to charge-transfer interactions between the ferrocene unit and the electron-poor $B(R)bipy$ substituent(s). This is confirmed by the ESR spectrum of the monoreduced species $[1A]0$, which features a line shape indicating considerable admixt. of the ligand and metal orbitals. The crystal and mol. structures of $[1A]PF_6$, $[2A](PF_6)_2$, and $[4A]Br_4 \cdot 7.75H_2O$ were detd. by x-ray crystallog.

IT 196196-00-6, 1,1',3,3'-Tetrakis(bromo(methyl)boryl)ferrocene
(reaction with bipyridine)
RN 196196-00-6 HCA
CN Ferrocene, 1,1',3,3'-tetrakis(bromomethylboryl)- (9CI) (CA INDEX NAME)



CC 29-12 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 22, 72, 75
IT 51869-73-9, (Dibromoboryl)ferrocene 61647-51-6,
1,1'-Bis(bromo(methyl)boryl)ferrocene 61649-71-6,
(Bromo(ethoxy)boryl)ferrocene 196195-75-2 196196-00-6,
1,1',3,3'-Tetrakis(bromo(methyl)boryl)ferrocene
(reaction with bipyridine)

=> d 133 1-152 ti

- L33 ANSWER 1 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis and Characterization of (Perfluoroaryl)borane-Functionalized Carbosilane Dendrimers and Their Use as Lewis Acid Catalysts for the Hydrosilation of Acetophenone
- L33 ANSWER 2 OF 152 HCA COPYRIGHT 2003 ACS
TI 1,1,1-Trisborylalkanes as precursors for dicarbapentaboranes(5) - synthesis, reactivity, and structures of closo-1,5-bis(neopentyl)-2,3,4-trichloro-1,5-dicarbapentaborane and its derivatives
- L33 ANSWER 3 OF 152 HCA COPYRIGHT 2003 ACS
TI From bis(silylamino)tin dichlorides via di(1-alkynyl)-bis(silylamino)tin to new heterocycles by 1,1-organoboration
- L33 ANSWER 4 OF 152 HCA COPYRIGHT 2003 ACS
TI Development of hole-blocking amorphous molecular materials and their application in organic light-emitting diodes
- L33 ANSWER 5 OF 152 HCA COPYRIGHT 2003 ACS
TI Spiro compounds based on boron or aluminum and the use of the same in the electronics industry
- L33 ANSWER 6 OF 152 HCA COPYRIGHT 2003 ACS
TI Use of boron and aluminum compounds in electronic devices
- L33 ANSWER 7 OF 152 HCA COPYRIGHT 2003 ACS
TI Organoborane-Modified Silica Supports for Olefin Polymerization: Soluble Models for Metallocene Catalyst Deactivation
- L33 ANSWER 8 OF 152 HCA COPYRIGHT 2003 ACS
TI Photoinitiators comprising boranes and electron donors
- L33 ANSWER 9 OF 152 HCA COPYRIGHT 2003 ACS
TI Use of a boron derivative as catalyst for hydrosilylating unsaturated reagents
- L33 ANSWER 10 OF 152 HCA COPYRIGHT 2003 ACS
TI Colorimetric Fluoride Ion Sensing by Boron-Containing .pi.-Electron Systems
- L33 ANSWER 11 OF 152 HCA COPYRIGHT 2003 ACS
TI Heterobuckybowls: A Theoretical Study on the Structure, Bowl-to-Bowl Inversion Barrier, Bond Length Alternation, Structure-Inversion Barrier Relationship, Stability, and Synthetic Feasibility
- L33 ANSWER 12 OF 152 HCA COPYRIGHT 2003 ACS
TI Use of a boron derivative as heat-activated catalyst for polymerization and/or crosslinking of silicones by dehydrogenation condensation
- L33 ANSWER 13 OF 152 HCA COPYRIGHT 2003 ACS
TI Electroluminescent device containing new electron transport

substance for improving luminescent properties, heat-resistance, and durability

- L33 ANSWER 14 OF 152 HCA COPYRIGHT 2003 ACS
TI Creation of novel light sensitive amorphous molecular materials and their photovoltaic properties
- L33 ANSWER 15 OF 152 HCA COPYRIGHT 2003 ACS
TI Noncoordinating dendrimer polyanions: cocatalysts for the metallocene-catalyzed olefin polymerization
- L33 ANSWER 16 OF 152 HCA COPYRIGHT 2003 ACS
TI The First Doubly Borylated Enolate as an Intermediate of the Double Aldol Reaction
- L33 ANSWER 17 OF 152 HCA COPYRIGHT 2003 ACS
TI Organic electroluminescent component
- L33 ANSWER 18 OF 152 HCA COPYRIGHT 2003 ACS
TI Reactions of diboratetrahalides(4) with boriranylideneboranes - formation, reactivity, and structures of cyclic tetraborylmethanes and isomeric diborylmethyleneborane derivatives
- L33 ANSWER 19 OF 152 HCA COPYRIGHT 2003 ACS
TI Formation and Unexpected Catalytic Reactivity of Organoaluminum Boryloxides
- L33 ANSWER 20 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis and reactivity of monoborylacetylene derivatives
- L33 ANSWER 21 OF 152 HCA COPYRIGHT 2003 ACS
TI A New Strategy To Achieve Perfectly Planar Carbon Tetracoordination
- L33 ANSWER 22 OF 152 HCA COPYRIGHT 2003 ACS
TI Organotransition-metal metallacarboranes. Part 56. Benzene-centered tri- and tetrametallacarborane sandwich complexes
- L33 ANSWER 23 OF 152 HCA COPYRIGHT 2003 ACS
TI Olefin polymerization process and catalyst system therefor
- L33 ANSWER 24 OF 152 HCA COPYRIGHT 2003 ACS
TI Organic electroluminescent devices
- L33 ANSWER 25 OF 152 HCA COPYRIGHT 2003 ACS
TI Syntheses, structures, and reactivity of hexaborylbenzene derivatives
- L33 ANSWER 26 OF 152 HCA COPYRIGHT 2003 ACS
TI Studies of the bonding in iron(II) cyclopentadienyl and arene sandwich compounds. Part 5. An interpretation of the ⁵⁷Fe Mossbauer spectroscopic data of dibromoborylferrocenes, and related molecules

- L33 ANSWER 27 OF 152 HCA COPYRIGHT 2003 ACS
TI New Tetrameric Alkylmetal Boryloxides [$(\mu_3\text{-R}_2\text{BO})\text{MR}'$]₄ of Zinc and Cadmium with Heterocubane Structure
- L33 ANSWER 28 OF 152 HCA COPYRIGHT 2003 ACS
TI Dendritic carborasilanes containing hydroxy groups on the periphery
- L33 ANSWER 29 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis of boron-halogenated diborylamines and diborylhydrazines by cleavage of stannazanes
- L33 ANSWER 30 OF 152 HCA COPYRIGHT 2003 ACS
TI Organometallic dendrimers, their preparation and use with metallocenes as olefin polymerization catalysts
- L33 ANSWER 31 OF 152 HCA COPYRIGHT 2003 ACS
TI Syntheses, structures, and reactivity of 2,5-diboryl-1-alkylpyrroles and di(1-alkyl-2-pyrrolyl)boranes
- L33 ANSWER 32 OF 152 HCA COPYRIGHT 2003 ACS
TI A new carborane cage: hexacarba-arachno-dodecaborane(12)
- L33 ANSWER 33 OF 152 HCA COPYRIGHT 2003 ACS
TI 1-Carba-arachno-pentaborane(10) derivatives
- L33 ANSWER 34 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis of C₂B₃X-heterocycles (X = C, N, P, O, S) from 1,3,5-triborapentanes
- L33 ANSWER 35 OF 152 HCA COPYRIGHT 2003 ACS
TI Borate photoinitiators from polyboranes
- L33 ANSWER 36 OF 152 HCA COPYRIGHT 2003 ACS
TI Hexaborylbenzene and tetraborylethene derivatives
- L33 ANSWER 37 OF 152 HCA COPYRIGHT 2003 ACS
TI The Tris(9-borabicyclo[3.3.1]nonyl)silylium Cation: A Suggestion for a Weakly Coordinated Silylium Cation in Solution
- L33 ANSWER 38 OF 152 HCA COPYRIGHT 2003 ACS
TI Calix-4-resorcinarene Monolayers and Multilayers: Formation, Structure, and Differential Adsorption¹
- L33 ANSWER 39 OF 152 HCA COPYRIGHT 2003 ACS
TI Intramolecularly bridged organo-bis[(dialkylamino)chloroboranes]
- L33 ANSWER 40 OF 152 HCA COPYRIGHT 2003 ACS
TI Hexaborylbenzene and tetraborylethene derivatives
- L33 ANSWER 41 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis of pentaalkyl-6-bromo-2,3,4,5-tetracarba-nido-hexaboranes(6)

- L33 ANSWER 42 OF 152 HCA COPYRIGHT 2003 ACS
TI Fe-B Bonding in (Dibromoboryl)ferrocene: A Structural and Theoretical Investigation
- L33 ANSWER 43 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis of Group 4 Organometallic Complexes that Contain the Bis(borylamide) Ligand [Mes2BNCH2CH2NBMes2]2-
- L33 ANSWER 44 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis of 1,6-dihalogeno-2,3,4,5-tetracarba-nido-hexaborane(6) derivatives 1,4,6,9-Tetraalkyl-3,8-diethyl-2,7-bis(diethylboryl)-5-stannaspiro[4.4]nona-1,3,6,8-tetraenes (shown as I; R = alkyl = Et (2a), Pr (2b), iPr (2c), Bu (2d)) react with four equiv. of BBr3 to give 2,3,4,5-tetraalkyl-1,6-dibromo-2,3,4,5-tetracarba-nido-hexaboranes(6) (3a-d; shown as II, X = X1 = Br) in high yield.
- L33 ANSWER 45 OF 152 HCA COPYRIGHT 2003 ACS
TI Amphiphilic carbohydrate-based mesogens, 11. Synthesis of mesogenic 1-alkylthio-1-deoxy-D-galactitols by glycoside reduction
- L33 ANSWER 46 OF 152 HCA COPYRIGHT 2003 ACS
TI Contributions to the chemistry of boron. 230. Electrophilic borylation of metallocenes: synthesis and molecular structures of 1,1',3,3'-tetrakis(dibromoboryl)metallocenes of the iron triad
- L33 ANSWER 47 OF 152 HCA COPYRIGHT 2003 ACS
TI Metal-boron interactions in boron-substituted ferrocenes, ruthenocenes and osmocenes
- L33 ANSWER 48 OF 152 HCA COPYRIGHT 2003 ACS
TI A .mu.-.eta.6:.eta.6-1,3,5-triboratabenzenebis(cyclopentadienylcobalt) triple-decker complex
- L33 ANSWER 49 OF 152 HCA COPYRIGHT 2003 ACS
TI Boron compounds. 122. Tricyclic tetraboradisiladodecane from dimethyl-di-1-propnylsilane and ethyldiboranes(6)
- L33 ANSWER 50 OF 152 HCA COPYRIGHT 2003 ACS
TI Borylation of 1,1'-dibromoferrocene and alkylferrocenes
- L33 ANSWER 51 OF 152 HCA COPYRIGHT 2003 ACS
TI Method for preparing precursors and intermediates for the synthesis of myo-inositol phosphates and glucosyl-phosphatidyl-inositols, and their preparation
- L33 ANSWER 52 OF 152 HCA COPYRIGHT 2003 ACS
TI 1,1-Organoboration of tri-1-alkynyltin compounds: novel triorganotin cations, stannoles, 3-stannolenes and 1-stanna-4-bora-2,5-cyclohexadienes
- L33 ANSWER 53 OF 152 HCA COPYRIGHT 2003 ACS

- TI Studies on the mutagenicity of a peptoplast adhesive in *Salmonella typhimurium*
- L33 ANSWER 54 OF 152 HCA COPYRIGHT 2003 ACS
TI Organosubstituted 1,1'-spirobisiloles and 1,1'-spirobigermoles by fourfold organoboration of tetra-1-alkynylsilanes and -germanes
- L33 ANSWER 55 OF 152 HCA COPYRIGHT 2003 ACS
TI Amphiphilic carbohydrate-based mesogens. IX. Mesogenic 4-O-alkyl-D-glucoses via methyl 4,6-O-alkylidene-D-glucopyranosides
- L33 ANSWER 56 OF 152 HCA COPYRIGHT 2003 ACS
TI Balancing steric and electronic factors in push-pull benzenes: an ab initio study on the molecular structure of 1,3,5-triamino-2,4,6-trinitrobenzene and related compounds
- L33 ANSWER 57 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis and reactions of 1,1,2,2-tetraborylethane derivatives
- L33 ANSWER 58 OF 152 HCA COPYRIGHT 2003 ACS
TI trans-Vinylboranes from 9-borabicyclo[3.3.1]nonane through dehydroborylation
- L33 ANSWER 59 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis of polyborylated ferrocenes
- L33 ANSWER 60 OF 152 HCA COPYRIGHT 2003 ACS
TI Stability patterns in borane cluster chemistry rationalised by extended Hückel molecular orbital studies
- L33 ANSWER 61 OF 152 HCA COPYRIGHT 2003 ACS
TI Hexahydrozirconation versus hexahydroboration routes to hexaiodotentacled aromatic iron sandwiches
- L33 ANSWER 62 OF 152 HCA COPYRIGHT 2003 ACS
TI The regioselective synthesis of enantiomerically pure myo-inositol derivatives. Efficient synthesis of myo-inositol 1,4,5-trisphosphate
- L33 ANSWER 63 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis and properties of 1,3,5-tris(dimethylboryl)benzene and 1,3-bis(dimethylboryl)benzene
- L33 ANSWER 64 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis and structure of tin-alkylated and partially halogenated distannylamines: the role of the nitrogen lone pair
- L33 ANSWER 65 OF 152 HCA COPYRIGHT 2003 ACS
TI A new synthesis of 1,4-diboracyclohexa-2,5-diene
- L33 ANSWER 66 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis and structural and spectroscopic characterization of the

Germanazene $[\text{GeN}(2,6\text{-i-Pr}_2\text{C}_6\text{H}_3)]_3$ and the tin and lead tetramers $[\text{SnN}(\text{BMes}_2)]_4$, $[\text{SnN}(2,6\text{-i-Pr}_2\text{C}_6\text{H}_3)]_4$, and $[\text{PbN}(2,6\text{-i-Pr}_2\text{C}_6\text{H}_3)]_4$

- L33 ANSWER 67 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis and spectroscopic and x-ray structural characterization of the first homoleptic transition-metal boryloxides $[\text{Mn}(\text{OBTrip}_2)(\mu\text{-OBTrip}_2)]_2$ and $[\text{Fe}(\text{OBMes}_2)(\mu\text{-OBMes}_2)]_2$
- L33 ANSWER 68 OF 152 HCA COPYRIGHT 2003 ACS
TI Amphiphilic carbohydrate-based mesogens. VII. Synthesis of mesogenic 4- and 6-O-alkyl-D-glucitols
- L33 ANSWER 69 OF 152 HCA COPYRIGHT 2003 ACS
TI Butylthiodibutylborane-induced dimerization of N-(pyrid-2-yl)- and N-(5-methylpyrid-2-yl)amides of cyanoacetic acid
- L33 ANSWER 70 OF 152 HCA COPYRIGHT 2003 ACS
TI Preparation of myo-inositols
- L33 ANSWER 71 OF 152 HCA COPYRIGHT 2003 ACS
TI Novel highly regioselective O-alkylation and O-acylation of myo-inositol
- L33 ANSWER 72 OF 152 HCA COPYRIGHT 2003 ACS
TI Amphiphilic carbohydrate-based mesogens. VI. Synthesis of a series of alkyl 1-thio-D-glycopyranosides and their regioselective reductions to 1-alkylthio-1-deoxy-D-glucitols
- L33 ANSWER 73 OF 152 HCA COPYRIGHT 2003 ACS
TI Amphiphilic carbohydrate-based mesogens. V. Mesogenic 1-O-alkyl-D-glucitols from alkyl D-glucopyranosides
- L33 ANSWER 74 OF 152 HCA COPYRIGHT 2003 ACS
TI Azasilatrane methanolysis pathways: stereoelectronic influences
- L33 ANSWER 75 OF 152 HCA COPYRIGHT 2003 ACS
TI A bicyclic isomer of the closo-carborane $(\text{CH})_2(\text{BR})_4$
- L33 ANSWER 76 OF 152 HCA COPYRIGHT 2003 ACS
TI MNDO calculations on tetrathiafulvalenes
- L33 ANSWER 77 OF 152 HCA COPYRIGHT 2003 ACS
TI 2,4,6,8,9,10-Hexachloro-2,4,6,8,9,10-hexaboradamantane
- L33 ANSWER 78 OF 152 HCA COPYRIGHT 2003 ACS
TI A new route to halogenated carboranes
- L33 ANSWER 79 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis, NMR, and preliminary binding studies of a new chiral macrocycle from β -cyclodextrin
- L33 ANSWER 80 OF 152 HCA COPYRIGHT 2003 ACS

- TI Boron compounds. 75. Reactions of (organo)phosphorus-oxygen compounds with diorgano-hydro-boranes
- L33 ANSWER 81 OF 152 HCA COPYRIGHT 2003 ACS
- TI Contribution to boron chemistry. CLXXV. Effect of steric factors on the conformation of diborylamines
- L33 ANSWER 82 OF 152 HCA COPYRIGHT 2003 ACS
- TI Boron compounds. Part 69. Introduction and removal of tert-butyldimethylsilyl groups via diethylboryloxy compounds
- L33 ANSWER 83 OF 152 HCA COPYRIGHT 2003 ACS
- TI Organoboron disaccharides, III. Regioselective O-ethylboranediylation of octakis-O-(diethylboryl)sucrose
- L33 ANSWER 84 OF 152 HCA COPYRIGHT 2003 ACS
- TI Synthesis of 4-O-(1-deoxy-D-alDitol-1-yl)-D-alDitols from disaccharide derivatives
- L33 ANSWER 85 OF 152 HCA COPYRIGHT 2003 ACS
- TI Synthesis of new chiral macrocyclic polyhydroxy ethers by reduction of cyclodextrins
- L33 ANSWER 86 OF 152 HCA COPYRIGHT 2003 ACS
- TI Chemistry of boron. 155. N-Borylated borazines
- L33 ANSWER 87 OF 152 HCA COPYRIGHT 2003 ACS
- TI Boron compounds. Part 66. Catalyzed acetal reduction with .rtbbrac.BH-boranes - 1-O-alkyl(aryl)alDitols, anhydroalDitols and 1-O-alDitylalDitols from O-glycopyranosides
- L33 ANSWER 88 OF 152 HCA COPYRIGHT 2003 ACS
- TI Boron compounds. 63. A mild procedure for partial or complete O-stannylation of polyhydroxy compounds
- L33 ANSWER 89 OF 152 HCA COPYRIGHT 2003 ACS
- TI Boron compounds. 61. Preparation of O-diorganoboryl derivatives of several (organo)-phosphorus acids
- L33 ANSWER 90 OF 152 HCA COPYRIGHT 2003 ACS
- TI Boron compounds. LV. A new O-silylation method via diethylboryl ethers and esters
- L33 ANSWER 91 OF 152 HCA COPYRIGHT 2003 ACS
- TI Organoboron monosaccharides. XII. Quantitative preparation of D-gluco-hexodialdose from sodium D-glucuronate or D-glucuronic acid
- L33 ANSWER 92 OF 152 HCA COPYRIGHT 2003 ACS
- TI Chemistry of boron. 119. Preparation and structure of tris[bis(organylthio)boryl]amines
- L33 ANSWER 93 OF 152 HCA COPYRIGHT 2003 ACS

- TI Boron photochemistry. XIV. The dimesitylboryl group as an auxochrome in dyes: the synthesis of para-substituted dimesitylborylphenylazonaphthol dyes
- L33 ANSWER 94 OF 152 HCA COPYRIGHT 2003 ACS
- TI Contributions to the chemistry of boron. CI. Formation and NMR spectra of nido-2,3,4,5-tetracarbahexaborane(6) derivatives
- L33 ANSWER 95 OF 152 HCA COPYRIGHT 2003 ACS
- TI Addition of tetrahalodiborane(4) molecules to dienes
- L33 ANSWER 96 OF 152 HCA COPYRIGHT 2003 ACS
- TI Studies on some dimethylamine derivatives of boron
- L33 ANSWER 97 OF 152 HCA COPYRIGHT 2003 ACS
- TI Organoboranes in organic synthesis. IX. Carbonylation products of organoboranes derived from myrcene
- L33 ANSWER 98 OF 152 HCA COPYRIGHT 2003 ACS
- TI Boron-nitrogen compounds. LXXVII. The reaction of (dimethylamino)diethylborane with 3,3'-diaminodipropylamine
- L33 ANSWER 99 OF 152 HCA COPYRIGHT 2003 ACS
- TI Boron compounds, XLVI. Preparation of 9-borabicyclo[3.3.1]nonanamines
- L33 ANSWER 100 OF 152 HCA COPYRIGHT 2003 ACS
- TI Pyramidal tetracoordinated carbon
- L33 ANSWER 101 OF 152 HCA COPYRIGHT 2003 ACS
- TI Nuclear magnetic resonance studies on boron compounds, XIV. Indirect nuclear spin-spin coupling of boron-11 with other directly bonded nuclei
- L33 ANSWER 102 OF 152 HCA COPYRIGHT 2003 ACS
- TI Boron compounds. 45. 6-Deoxy-O-acyl-.alpha.-L-mannofuranoses via O-ethylboranediyl derivatives
- L33 ANSWER 103 OF 152 HCA COPYRIGHT 2003 ACS
- TI Contributions to the chemistry of boron, LXXIX. Tris(diorganylboryl)amines
- L33 ANSWER 104 OF 152 HCA COPYRIGHT 2003 ACS
- TI Boron compounds, XLIII. Regioselective synthesis of O-derivatives of some methyl glycosides
- L33 ANSWER 105 OF 152 HCA COPYRIGHT 2003 ACS
- TI Stabilization of planar tetracoordinate carbon
- L33 ANSWER 106 OF 152 HCA COPYRIGHT 2003 ACS
- TI Boron compounds. 40. O-Ethylboranediyl derivatives of dulcitol

- L33 ANSWER 107 OF 152 HCA COPYRIGHT 2003 ACS
TI Boron compounds, XXXVIII. Regioselective O-derivatization of D-mannitol with the aid of ethylboron protective groups
- L33 ANSWER 108 OF 152 HCA COPYRIGHT 2003 ACS
TI Hydroboration of monoterpene alcohols
- L33 ANSWER 109 OF 152 HCA COPYRIGHT 2003 ACS
TI Boron compounds. XXXVI. Regioselective O-derivatization of xylitol with the aid of ethylboron protective groups
- L33 ANSWER 110 OF 152 HCA COPYRIGHT 2003 ACS
TI Boron compounds. XXXV. O,O'-Ethylboranediyl derivatives of alkanetriols and -tetraols
- L33 ANSWER 111 OF 152 HCA COPYRIGHT 2003 ACS
TI Boron compounds XXXIII. Preparation and properties of alkylated 1,5-dicarba-closo-pentaboranes(5)
- L33 ANSWER 112 OF 152 HCA COPYRIGHT 2003 ACS
TI Isolation, characterization, and reactions of the triborylmethide anion
- L33 ANSWER 113 OF 152 HCA COPYRIGHT 2003 ACS
TI Boron compounds. XXX. O-Dialkylborylation of saccharides and polyols
- L33 ANSWER 114 OF 152 HCA COPYRIGHT 2003 ACS
TI Chemistry of boron. LXIV. An electron deficient triaminoborane. Tris[N-(dimethylboryl)methylamino]borane
- L33 ANSWER 115 OF 152 HCA COPYRIGHT 2003 ACS
TI Scintillation counting using triarylboranes as scintillators
- L33 ANSWER 116 OF 152 HCA COPYRIGHT 2003 ACS
TI Converting trialkylboranes with proton-containing compounds
- L33 ANSWER 117 OF 152 HCA COPYRIGHT 2003 ACS
TI Tris(dichloroboryl)methane, bis(dichlororyl)methane, and a possible new route to carbonarnes
- L33 ANSWER 118 OF 152 HCA COPYRIGHT 2003 ACS
TI Preparation and properties of bis(dichloroboryl)methane and tris(dichloroboryl)methane
- L33 ANSWER 119 OF 152 HCA COPYRIGHT 2003 ACS
TI Metal boron compounds. XII. Diphenylboryl and dibromoborylstannanes
- L33 ANSWER 120 OF 152 HCA COPYRIGHT 2003 ACS
TI Reactions of diboron tetrahalides with haloolefins. Formation of poly(dihaloboryl)ethanes

- L33 ANSWER 121 OF 152 HCA COPYRIGHT 2003 ACS
TI Reactions of trivinylborane with diboron tetrahalides: properties of some dihaloboryl(vinylboryl)ethanes
- L33 ANSWER 122 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis by use of molecular carbon. I. Boron halides
- L33 ANSWER 123 OF 152 HCA COPYRIGHT 2003 ACS
TI Diphenylborane derivatives containing boron-tin bonds
- L33 ANSWER 124 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis of poly(phosphinoboranes)
- L33 ANSWER 125 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis of polyphosphinoboranes by the reaction of secondary bisphosphines with triethylamineborane
- L33 ANSWER 126 OF 152 HCA COPYRIGHT 2003 ACS
TI 1,2-Bis(dichloroboryl)-1-(vinylboryl)ethane
- L33 ANSWER 127 OF 152 HCA COPYRIGHT 2003 ACS
TI The methylation of reactive boron-halogen compounds with tetramethyl-lead
- L33 ANSWER 128 OF 152 HCA COPYRIGHT 2003 ACS
TI 1,1,2,2-Tetrakis(difluoroboryl)ethane
- L33 ANSWER 129 OF 152 HCA COPYRIGHT 2003 ACS
TI Hydrolysis of tris(N-dibutylboryl-4-methyl-2-pyridylamino)borane
- L33 ANSWER 130 OF 152 HCA COPYRIGHT 2003 ACS
TI Boron-fluorine chemistry. II. Reaction of boron monofluoride with acetylenes
- L33 ANSWER 131 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis of carbon-boron bonds with small carbon molecules
- L33 ANSWER 132 OF 152 HCA COPYRIGHT 2003 ACS
TI Reactions of diborontetrahalides with some unsaturated organometallic compounds
- L33 ANSWER 133 OF 152 HCA COPYRIGHT 2003 ACS
TI Nuclear magnetic resonance spectroscopic studies on boron compounds. III. Proton nuclear magnetic resonance spectra of methyl- and ethylboranes
- L33 ANSWER 134 OF 152 HCA COPYRIGHT 2003 ACS
TI Methylation of reactive boron-halogen compounds with tetramethyllead
- L33 ANSWER 135 OF 152 HCA COPYRIGHT 2003 ACS
TI Addition of diboron tetrachloride to some cyclic olefins and dienes

- L33 ANSWER 136 OF 152 HCA COPYRIGHT 2003 ACS
TI The addition of B₂Cl₄ to 1,3-cyclohexadiene and the structural similarity of the adduct to that formed between B₂Cl₄ and naphthalene
- L33 ANSWER 137 OF 152 HCA COPYRIGHT 2003 ACS
TI Organoboron compounds. CXLVIII. Reaction of trialkylboron with allyl alcohol and allylamine
- L33 ANSWER 138 OF 152 HCA COPYRIGHT 2003 ACS
TI Novel boron derivatives
- L33 ANSWER 139 OF 152 HCA COPYRIGHT 2003 ACS
TI A new variety of organoborane
- L33 ANSWER 140 OF 152 HCA COPYRIGHT 2003 ACS
TI Investigation of a simple furenidone system by N.M.R. Synthesis of unsubstituted .DELTA.2-4-furenidone (.beta.-hydroxyfuran)
- L33 ANSWER 141 OF 152 HCA COPYRIGHT 2003 ACS
TI Isomerization of azetidine derivatives
- L33 ANSWER 142 OF 152 HCA COPYRIGHT 2003 ACS
TI Novel borane derivatives
- L33 ANSWER 143 OF 152 HCA COPYRIGHT 2003 ACS
TI Steric effects in tris(N-boryl-2-pyridylamino)borane and its derivatives
- L33 ANSWER 144 OF 152 HCA COPYRIGHT 2003 ACS
TI The nitro group as an ortho participant in the dissociation of iodobenzene dichloride
- L33 ANSWER 145 OF 152 HCA COPYRIGHT 2003 ACS
TI Organoboranes
- L33 ANSWER 146 OF 152 HCA COPYRIGHT 2003 ACS
TI The preparation and stabilization of acetylenic boranes
- L33 ANSWER 147 OF 152 HCA COPYRIGHT 2003 ACS
TI Synthesis of B-organofunctional borazine derivatives
- L33 ANSWER 148 OF 152 HCA COPYRIGHT 2003 ACS
TI Reaction of nitric oxide with tributylborane
- L33 ANSWER 149 OF 152 HCA COPYRIGHT 2003 ACS
TI Preparation and structure of tris(dialkylboryl-2-pyridylamino)borane
- L33 ANSWER 150 OF 152 HCA COPYRIGHT 2003 ACS
TI Organoboric acid amides

L33 ANSWER 151 OF 152 HCA COPYRIGHT 2003 ACS
TI Aluminum and (or) boron alkyls

L33 ANSWER 152 OF 152 HCA COPYRIGHT 2003 ACS
TI Aluminum and (or) boron alkyls

=> d 133 6/13,14,17,24 cbib abs hitstr hitind

L33 ANSWER 6 OF 152 HCA COPYRIGHT 2003 ACS

137:54392 Use of boron and aluminum compounds in electronic devices.
(Covion Organic Semiconductors GmbH, Germany). Eur. Pat. Appl. EP
1217668 A1 20020626, 20 pp. DESIGNATED STATES: R: AT, BE, CH, DE,
DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI,
RO, MK, CY, AL, TR. (German). CODEN: EPXXDW. APPLICATION: EP
2000-128296 20001222.

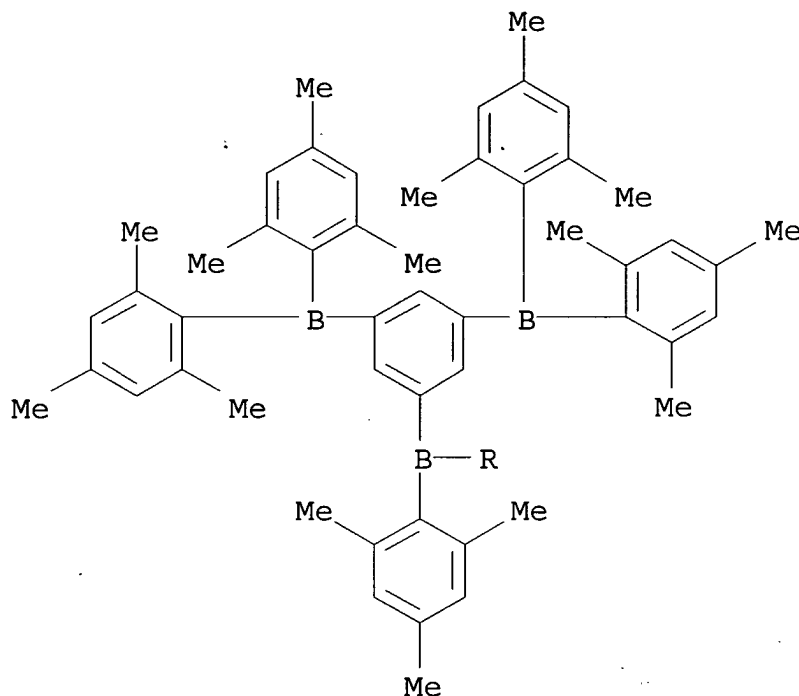
AB The use of compds. described by the general formula
 $Q_3mAr-(Z(Ar_1Q_1x)Ar_2Q_2y)_n$ (Ar = a C or heterocyclic arom ring or ring
system or a multiple arom. rings bonded together via metal atoms as,
e.g., sandwich complexes; Ar₁ and Ar₂ = independently selected ring
systems; independently selected CN, F, Cl, (un)branched or cyclic
C1-20 alkyl- or alkoxy groups in which .gtoreq.1 nonadjacent CH₂
groups may be replaced by -O-, -S-, -CO-, -COO-, -O-CO-, -NR₁-
-(NR₂R₃)+A-, or -CONR₄- and .gtoreq.1 H may be replaced by F, or a
C4-14 aryl or heteroaryl group which may have .gtoreq.1 nonarom.
substituents; A- = a singly charged anion or equiv.; m, x, and y =
independently 0-5; n = 2,3,4,5, or 6; and Z = B or Al) in
phosphorescent org. light-emitting devices is described.
Electron-transporting materials, active media, and hole-blocking
layers in org. light-emitting devices incorporating the the compds.
are also described.

IT **139623-37-3P**, 1,3,5-Tris(dimesitylboryl)benzene
(aluminum and boron aryl complex use in phosphorescent org.
light-emitting devices)

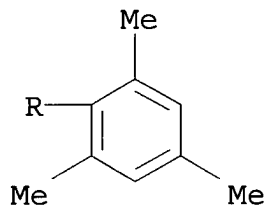
RN 139623-37-3 HCA

CN Borane, 1,3,5-benzenetriyltris[bis(2,4,6-trimethylphenyl)- (9CI)
(CA INDEX NAME)

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- IC ICM H01L051-30
ICS C07F005-02; C07F005-06
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76, 78
- IT 92011-77-3P, 1,4-Bis(dimesitylboryl)benzene 120965-85-7P
139623-37-3P, 1,3,5-Tris(dimesitylboryl)benzene
139623-38-4P, 1,3-Bis(dimesitylboryl)benzene 191534-41-5P
438533-58-5P, 2,6-Bis(dimesitylboryl)pyridine
(aluminum and boron aryl complex use in phosphorescent org.
light-emitting devices)
- L33 ANSWER 13 OF 152 HCA COPYRIGHT 2003 ACS

135:187696 Electroluminescent device containing new electron transport substance for improving luminescent properties, heat-resistance, and durability. Shirota, Yasuhiko (Japan). Jpn. Kokai Tokkyo Koho JP 2001233882 A2 20010828, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-51210 20000228.

AB The invention relates to an electroluminescent display device which contains 1,3,5-tris[5-(dimethylboryl)-2-thienyl]benzene in an electron transport layer. The electroluminescent display device contains tris(p-terphenyl-4-yl)amine in a luminescent layer. The electroluminescent display device contains an org. compd. selected from 4,4',4''-tris(3-methylphenylphenylamino)triphenylamine, 4,4',4''-tris(1-naphthylphenylamino)triphenylamine, 4,4',4''-tris(2-naphthylphenylamino)triphenylamine, 4,4',4''-tris[biphenyl-2-yl(phenyl)amino]triphenylamine, 4,4',4''-tris[biphenyl-3-yl(phenyl)amino]triphenylamine, 4,4',4''-tris[biphenyl-4-yl(3-methylphenyl)amino]triphenylamine, and 4,4',4''-tris[9,9-dimethyl-2-fluorenyl(phenyl)amino]triphenylamine in a pos. hole injection layer. The electroluminescent device is suitable for blue- and full color-flat panel displays.

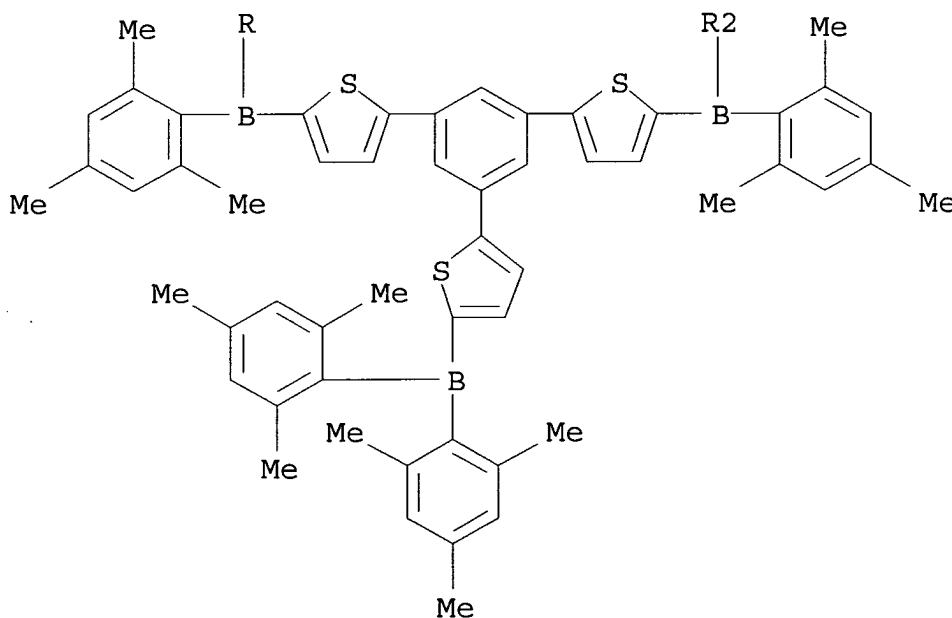
IT **355832-02-9P**

(electron transport substance in electroluminescent device with improved luminescent properties, heat-resistance, and durability)

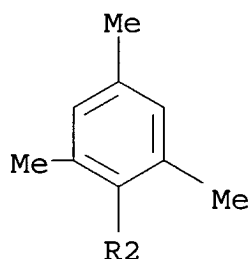
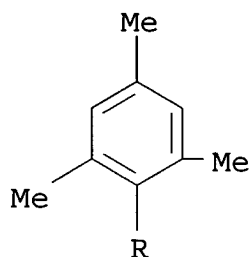
RN 355832-02-9 HCA

CN Borane, (1,3,5-benzenetriyltri-5,2-thiophenediyl)tris[bis(2,4,6-trimethylphenyl)- (9CI) (CA INDEX NAME)]

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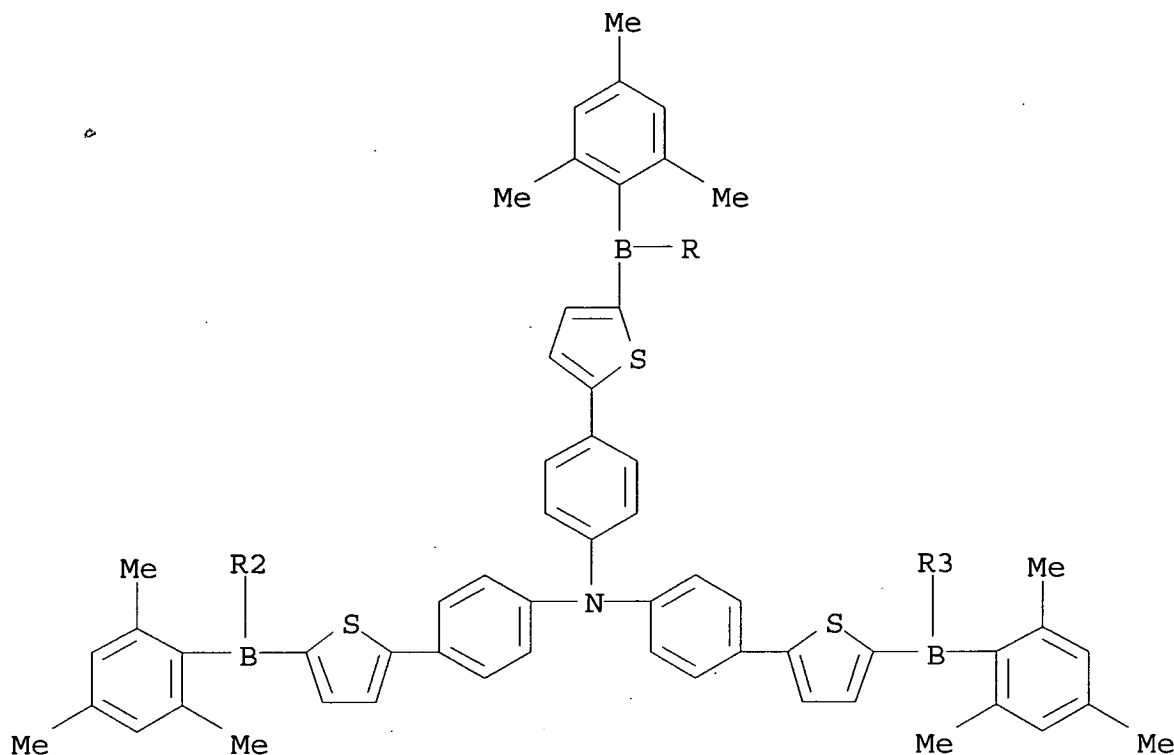
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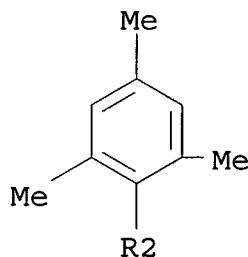
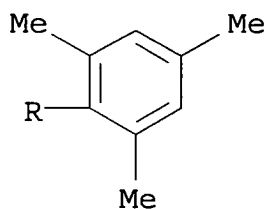
- IC ICM C07F005-02
ICS C07C211-54; C07D221-18; C09K011-06; H05B033-14; H05B033-22
- CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
- IT **355832-02-9P**
(electron transport substance in electroluminescent device with improved luminescent properties, heat-resistance, and durability)
- L33 ANSWER 14 OF 152 HCA COPYRIGHT 2003 ACS
135:173534 Creation of novel light sensitive amorphous molecular materials and their photovoltaic properties. Kinoshita, M.; Fujii, N.; Tsuzuki, T.; Shirota, Y. (Department of Applied Chemistry, Faculty of Engineering, Osaka University, Yamadaoka, Suita, Osaka, 565-0871, Japan). Synthetic Metals, 121(1-3), 1571-1572 (English) 2001. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier Science S.A..
- AB Novel light sensitive amorphous mol. materials, 4,4',4''-tris[4-methylphenyl(4-nitrophenyl)amino]triphenylamine (MNDTATA) and 4,4',4''-tris[5-(dimesitylboryl)thiophen-2-yl]triphenylamine (MB-TTPA), were designed and synthesized. Pn-heterojunction devices consisting of these materials as p-type org. semiconductors and anthra[2'',1'',9'':4,5,6:6'',5'',10'':4',5',6']diisoquino[2,1-a:2',1'-a']-dibenzimidazole-10.21-dione as an n-type material were found to respond to visible light of wavelengths from 400 to 800 nm, exhibiting conversion efficiencies of approx. 0.1% for white light irradiated through the ITO electrode.
- IT **354133-80-5P**
(MB-TTPA; prepn. of novel light sensitive amorphous mol.

RN	354133-80-5	HCA
CN	Benzenamine, 4-[5-[bis(2,4,6-trimethylphenyl)boryl]-2-thienyl]-N,N-bis[4-[5-[bis(2,4,6-trimethylphenyl)boryl]-2-thienyl]phenyl]- (9CI) (CA INDEX NAME)	

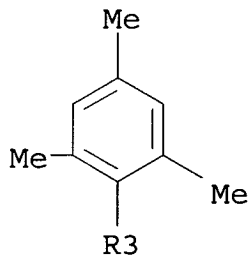
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CC 76-5 (Electric Phenomena)
 Section cross-reference(s): 25

IT **354133-80-5P**

(MB-TTPA; prepn. of novel light sensitive amorphous mol.
 materials and their photovoltaic properties in devices thereof)

L33 ANSWER 17 OF 152 HCA COPYRIGHT 2003 ACS

134:287602 Organic electroluminescent component. Ueda, Noriko; Okubo, Yasushi; Kita, Hiroshi (Konica Co., Japan). Jpn. Kokai Tokkyo Koho JP 2001093670 A2 20010406, 30 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-274848 19990928.

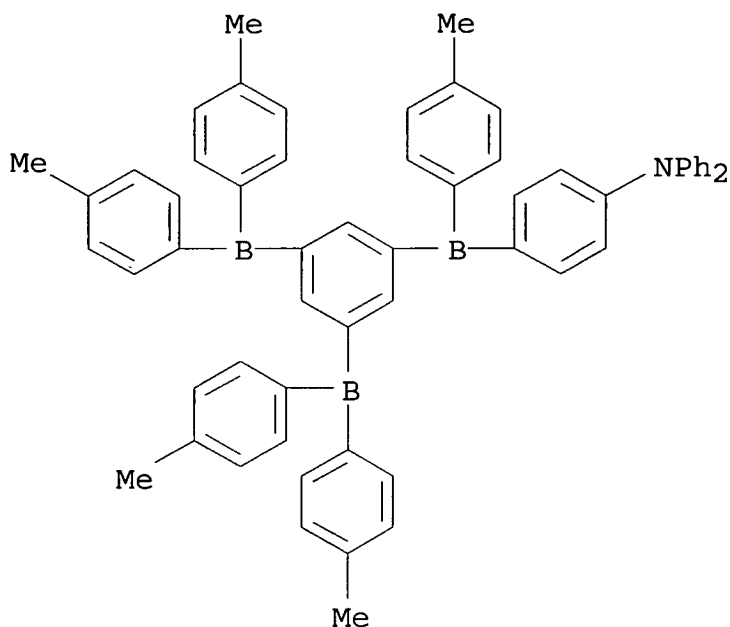
AB The invention refers to an org. electroluminescent component contg. at least one compd. $R_1R_2N(Q_1)n_1BAR_1Ar_2$ [$Ar_{1,2}$ = (un)substituted aryl, and may be joined to form a ring with the B atom; $R_{1,2}$ = functional group, and may be joined to form a ring with the N atom; Q_1 = (un)substituted arylene; n_1 = 0 or 1].

IT **332350-39-7 332350-51-3 332350-56-8**

(org. electroluminescent component)

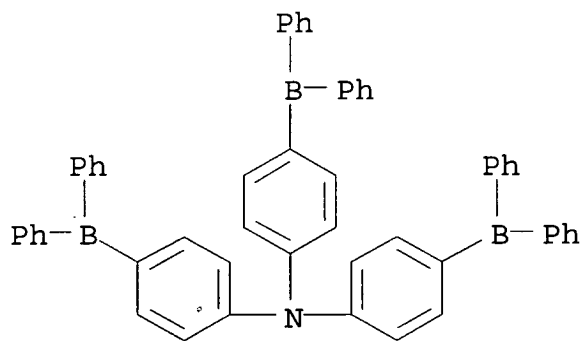
RN 332350-39-7 HCA

CN Benzenamine, 4-[[3,5-bis[bis(4-methylphenyl)boryl]phenyl](4-methylphenyl)boryl]-N,N-diphenyl- (9CI) (CA INDEX NAME)



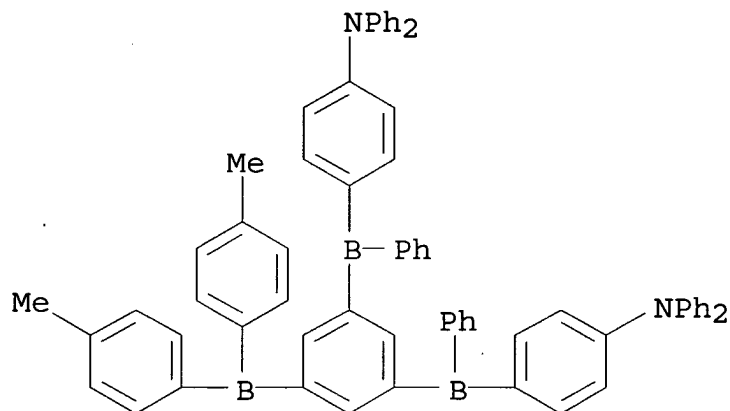
RN 332350-51-3 HCA

CN Benzenamine, 4-(diphenylboryl)-N,N-bis[4-(diphenylboryl)phenyl]- (9CI) (CA INDEX NAME)



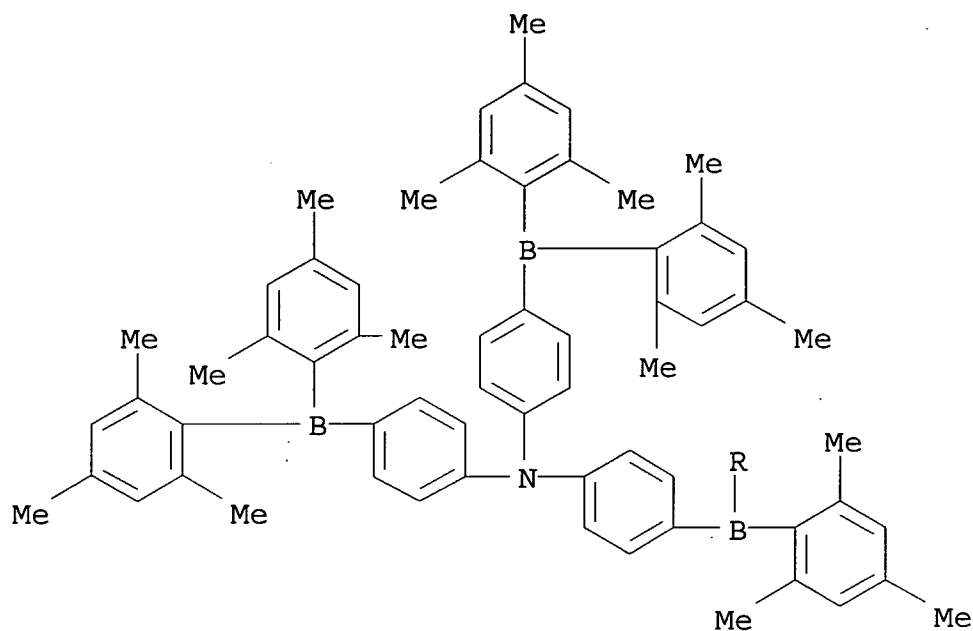
RN 332350-56-8 HCA

CN Benzenamine, 4,4'-[[5-[bis(4-methylphenyl)boryl]-1,3-phenylene]bis(phenylborylene)]bis[N,N-diphenyl- (9CI) (CA INDEX NAME)

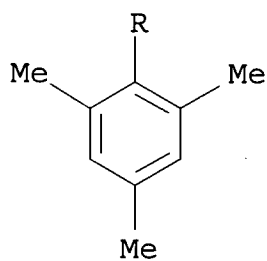


- IC ICM H05B033-14
ICS C09K011-06; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- IT 38186-32-2 38186-34-4 332350-25-1 332350-29-5 332350-31-9
332350-33-1 332350-35-3 332350-37-5 **332350-39-7**
332350-41-1 332350-42-2 332350-43-3 332350-44-4 332350-45-5
332350-46-6 332350-47-7 332350-48-8 332350-49-9 332350-50-2
332350-51-3 332350-52-4 332350-53-5 332350-54-6
332350-55-7 **332350-56-8**
(org. electroluminescent component)
- L33 ANSWER 24 OF 152 HCA COPYRIGHT 2003 ACS
- 133:303225 Organic electroluminescent devices. Tamano, Michiko; Onikubo, Shunichi; Maki, Shinichiro (Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000290645 A2 20001017, 31 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-103488 19990412.
- AB The devices comprise a phosphor or an electron transport layer contg. compd. A[B(Ar1)(Ar2)]_n (B = boron; A = 3-15 valency group; Ar1,2 = alkyl, single ring, condensed ring; one of A, Ar1,2 contain arom. or heteroarom. ring; n = 3-15).
- IT **50694-72-9 139623-37-3 300823-56-7**
300823-57-8 300823-58-9 300823-59-0
300823-60-3 300823-61-4 300823-62-5
(org. electroluminescent devices)
- RN 50694-72-9 HCA
- CN Benzenamine, 4-[bis(2,4,6-trimethylphenyl)boryl]-N,N-bis[4-[bis(2,4,6-trimethylphenyl)boryl]phenyl]- (9CI) (CA INDEX NAME)

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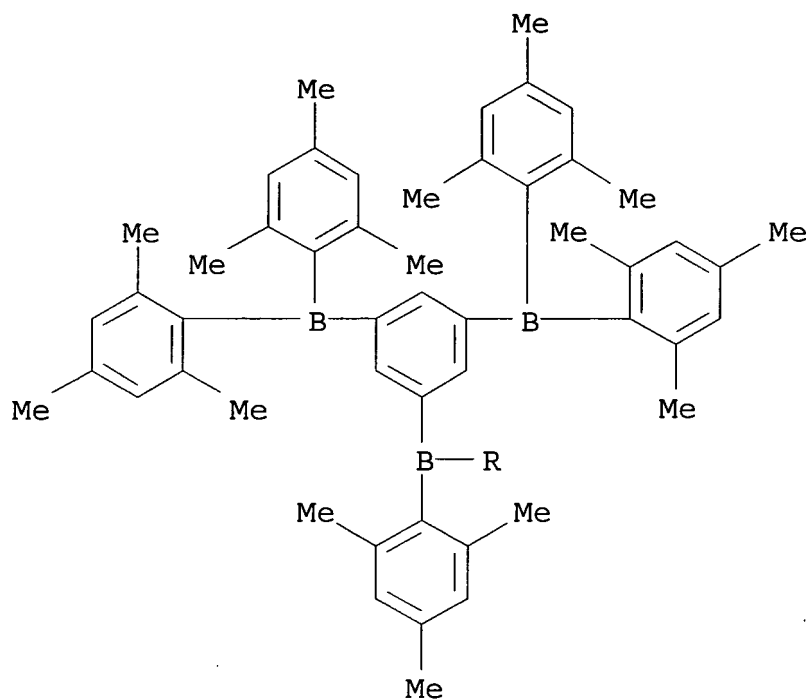


PAGE 2-A

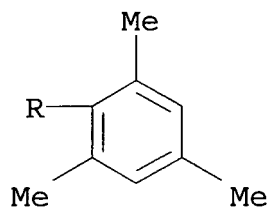


RN 139623-37-3 HCA
CN Borane, 1,3,5-benzenetriyltris[bis(2,4,6-trimethylphenyl)- (9CI)
(CA INDEX NAME)

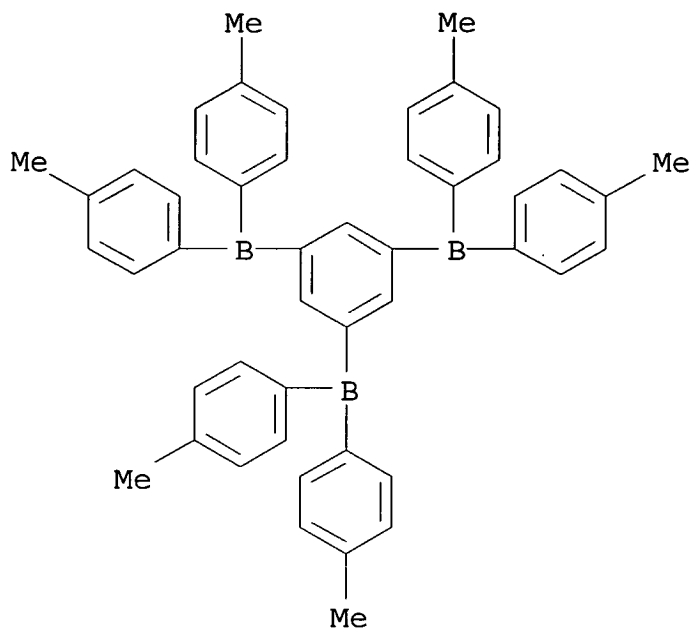
PAGE 1-A



PAGE 2-A

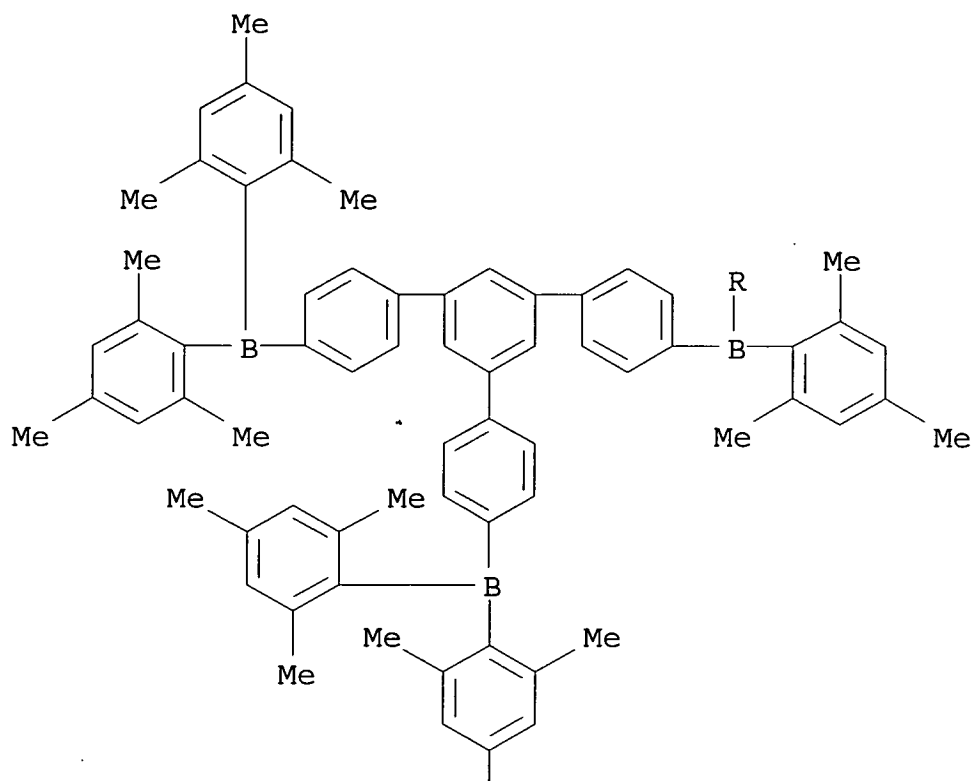


RN 300823-56-7 HCA
CN Borane, 1,3,5-benzenetriyltris[bis(4-methylphenyl) - (9CI) (CA INDEX NAME)

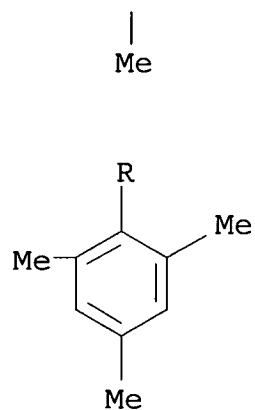


RN 300823-57-8 HCA
 CN Borane, [5'-[4-[bis(2,4,6-trimethylphenyl)boryl]phenyl][1,1':3',1''-terphenyl]-4,4''-diyl]bis[bis(2,4,6-trimethylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

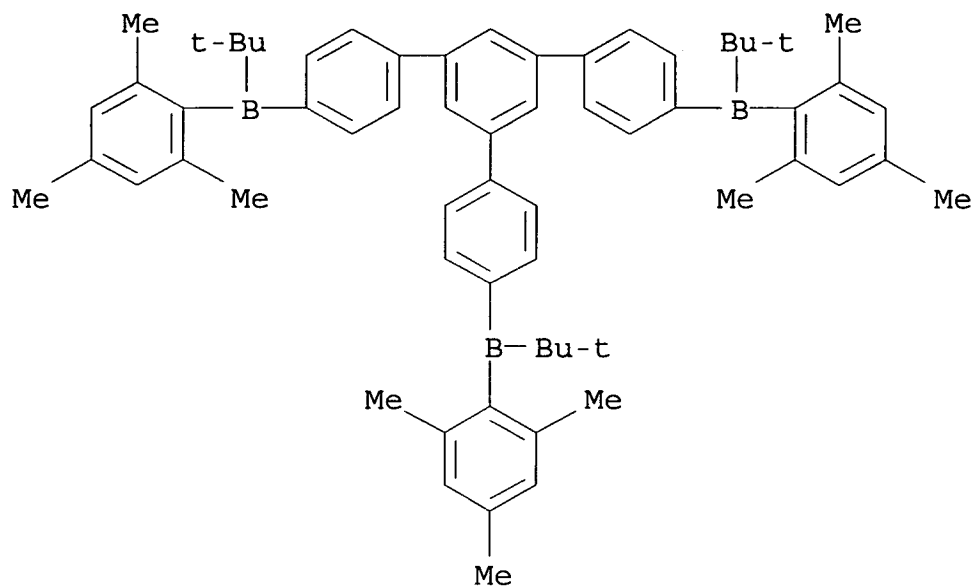


PAGE 2-A



RN 300823-58-9 HCA
 CN Borane, [5'-[4-[(1,1-dimethylethyl)(2,4,6-trimethylphenyl)boryl]phenyl][1,1':3',1''-terphenyl]-4,4''-diyl]bis[(1,1-dimethylethyl)(2,4,6-trimethylphenyl)- (9CI) (CA

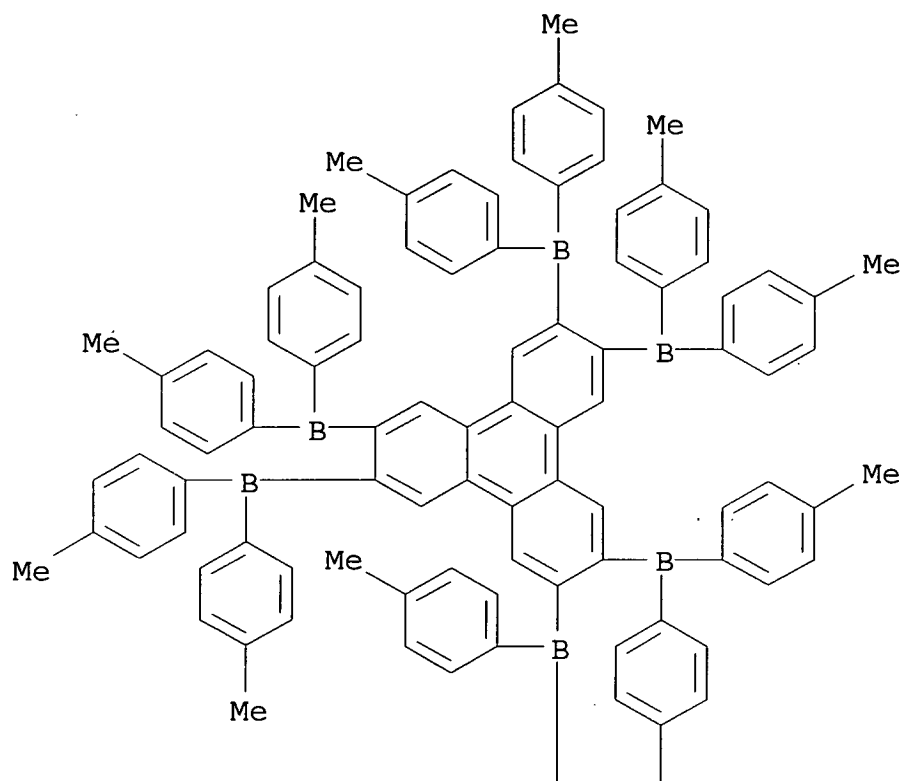
INDEX NAME)



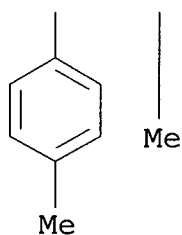
RN 300823-59-0 HCA

CN Borane, 2,3,6,7,10,11-triphenylenehexaylhexakis[bis(4-methylphenyl) -
(9CI) (CA INDEX NAME)

PAGE 1-A

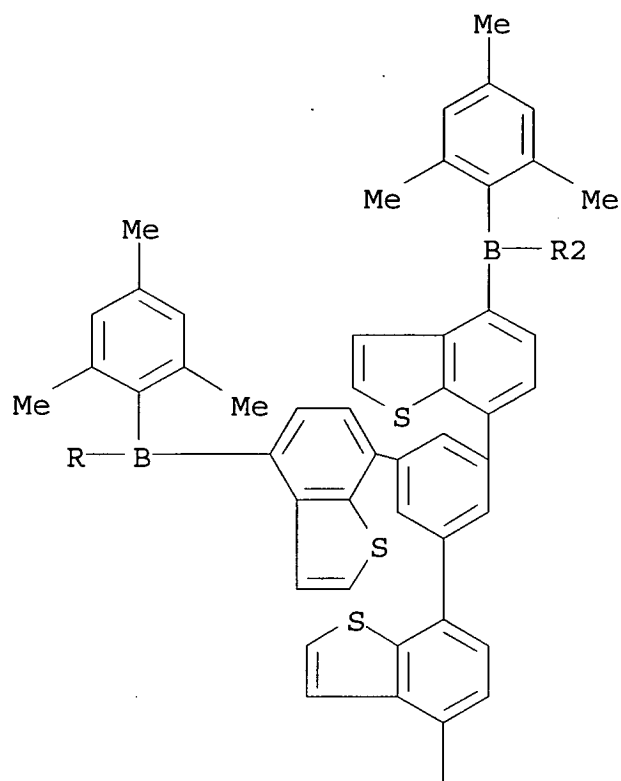


PAGE 2-A

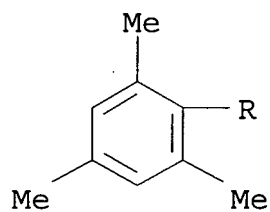
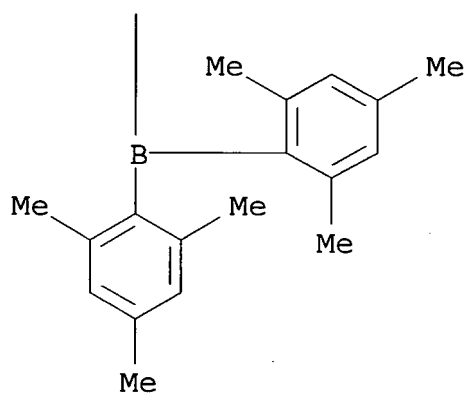


RN 300823-60-3 HCA
CN Borane, [1,3,5-benzenetriyltris(benzo[b]thiophene-7,4-diyl)]tris[bis(2,4,6-trimethylphenyl)-(9CI) (CA INDEX NAME)

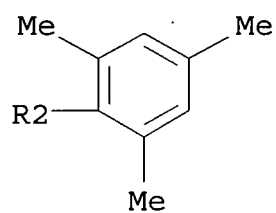
PAGE 1-A



PAGE 2-A

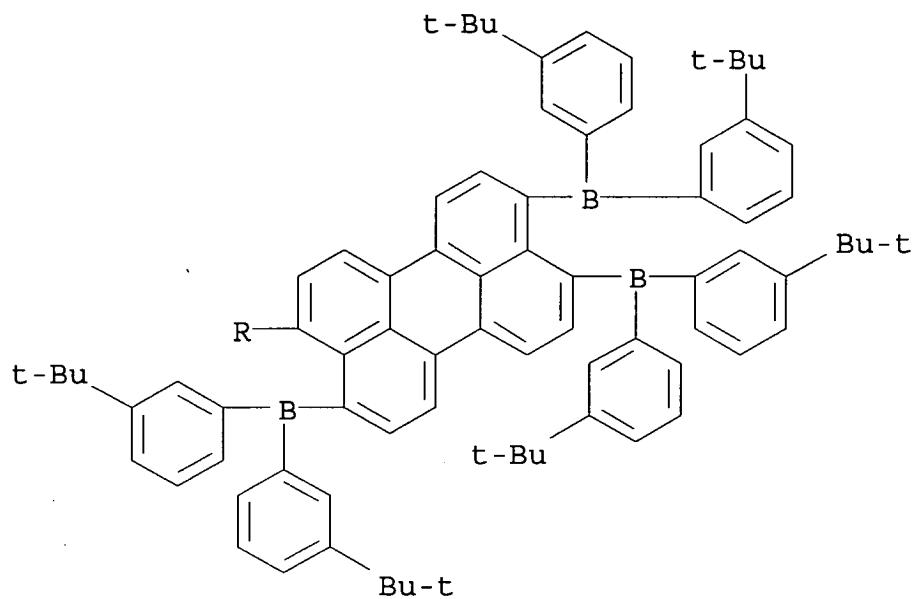


PAGE 3-A

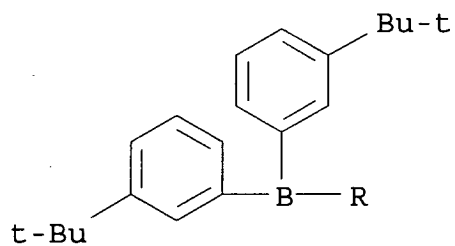


RN 300823-61-4 HCA
CN Borane, 3,4,9,10-perylenetetrayltetrakis[bis[3-(1,1-dimethylethyl)phenyl]]- (9CI) (CA INDEX NAME)

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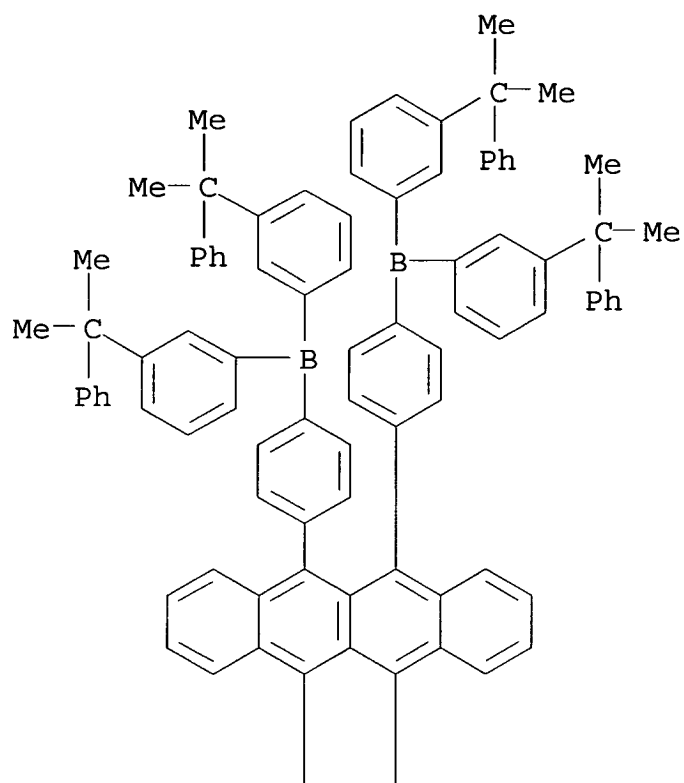


PAGE 2-A

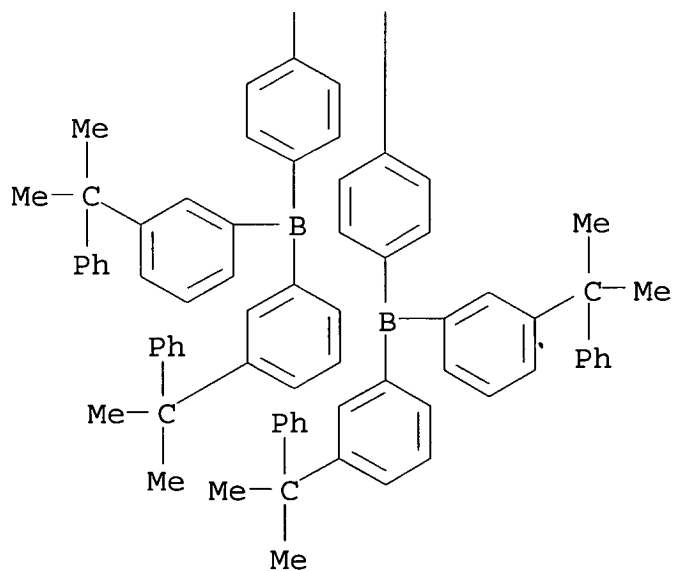


RN 300823-62-5 HCA
 CN Borane, (5,6,11,12-naphthacenetetrayltetra-4,1-phenylene)tetrakis[bis[3-(1-methyl-1-phenylethyl)phenyl] - (9CI) (CA INDEX NAME)

PAGE 1-A



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IC ICM C09K011-06
 ICS H05B033-14; H05B033-22; C07F005-02
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 IT 147-14-8 574-93-6, 29H,31H-Phthalocyanine 808-57-1 2085-33-8, Tris(8-quinolinolato)aluminum **50694-72-9** 50926-11-9, ITO 58473-78-2 65181-78-4 123847-85-8 **139623-37-3** 151026-65-2 166444-98-0 185690-39-5 272117-02-9 300823-52-3 **300823-56-7 300823-57-8 300823-58-9 300823-59-0 300823-60-3 300823-61-4 300823-62-5**
 (org. electroluminescent devices)

=> d 134 1-14 cbib abs hitstr hitind

L34 ANSWER 1 OF 14 HCA COPYRIGHT 2003 ACS

137:143031 Secondary lithium **battery**. Nishimura, Nobu; Okumura, Takefumi; Akatsuka, Masaki (Hitachi Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002216844 A2 20020802, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-11635 20010119.

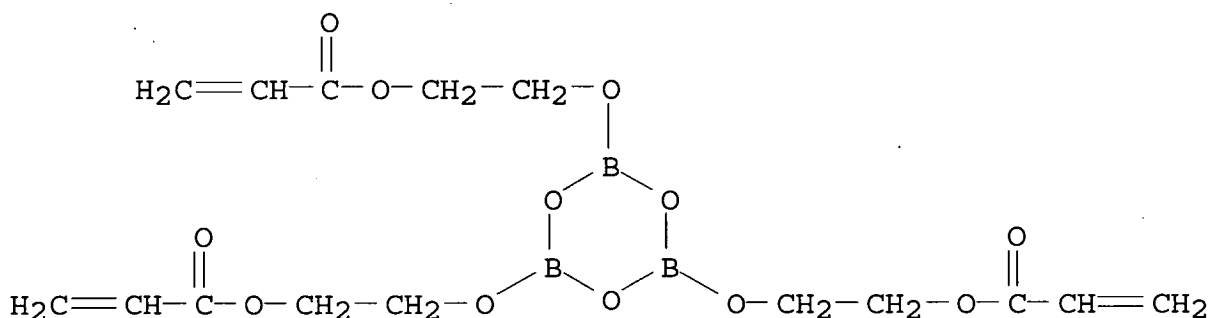
AB The title **battery** use a Li+ **polymer electrolyte** contg. an **electrolyte** salt and a (meth)acrylate crosslinked cyclic boroxine (I) polymer, or a crosslinked polymer of I and a poly(alkylene oxide).

IT **444816-02-8 444816-03-9 444816-04-0 444816-05-1 444816-06-2**

(compns. of **electrolytes** contg. crosslinked cyclic boroxine polymers for secondary lithium **batteries**)

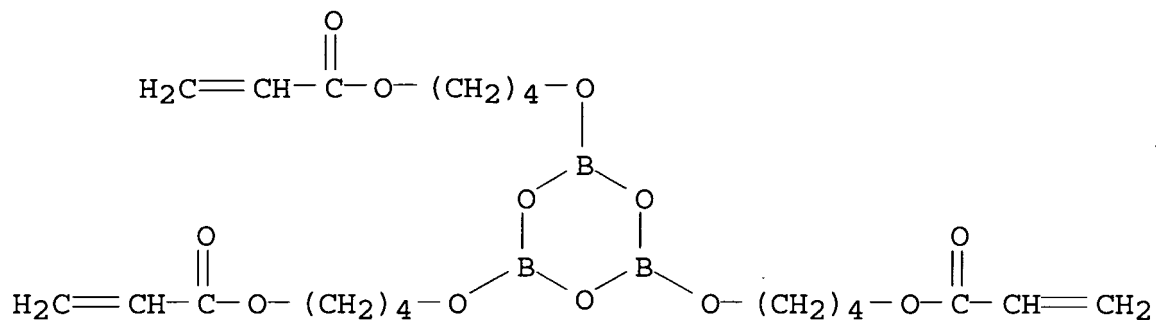
RN 444816-02-8 HCA

CN 2-Propenoic acid, 2,4,6-boroxintriyltris(oxy-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)



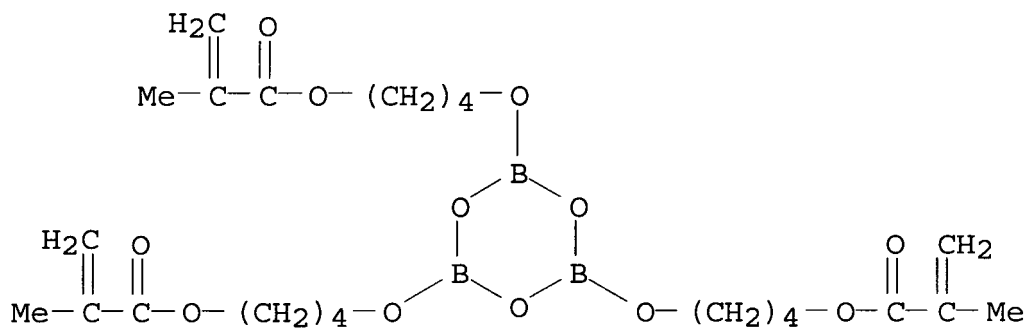
RN 444816-03-9 HCA

CN 2-Propenoic acid, 2,4,6-boroxintriyltris(oxy-4,1-butanediyl) ester (9CI) (CA INDEX NAME)



RN 444816-04-0 HCA

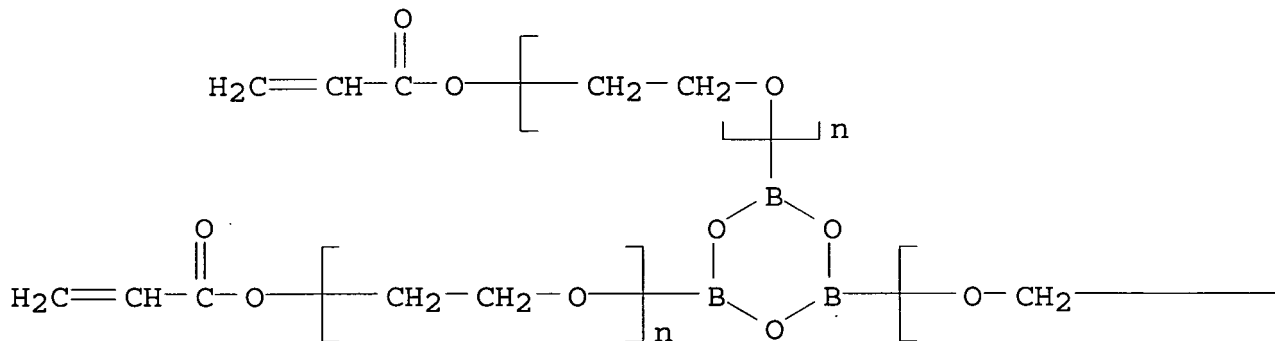
CN 2-Propenoic acid, 2-methyl-, 2,4,6-boroxintriyltris(oxy-4,1-butanediyl) ester (9CI) (CA INDEX NAME)



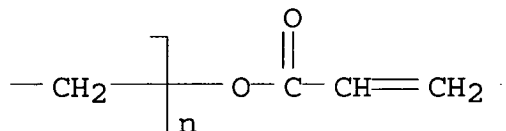
RN 444816-05-1 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.,.alpha.',.alpha.''-2,4,6-boroxintriyltris[.omega.-[(1-oxo-2-propenyl)oxy]- (9CI) (CA INDEX NAME)

PAGE 1-A

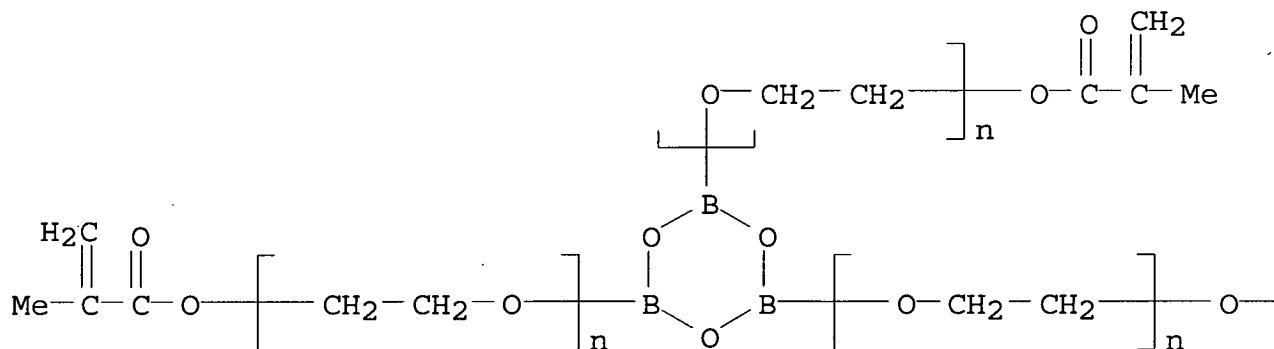


PAGE 1-B

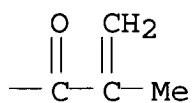


RN 444816-06-2 HCA
 CN Poly(oxy-1,2-ethanediyl), .alpha.,.alpha.',.alpha.''-2,4,6-
 boroxintriyltris[.omega.-[(2-methyl-1-oxo-2-propenyl)oxy]- (9CI)
 (CA INDEX NAME)

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PAGE 1-B



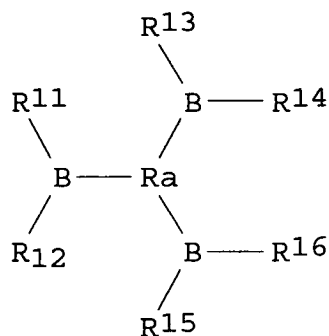
IC ICM H01M010-40
 ICS C08F020-36; C08F290-06

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium **battery electrolyte**
crosslinked cyclic boroxine acrylate
IT **Battery electrolytes**
(compns. of **electrolytes** contg. crosslinked cyclic boroxine polymers for secondary lithium **batteries**)
IT Polyoxyalkylenes, uses
(compns. of **electrolytes** contg. crosslinked cyclic boroxine polymers for secondary lithium **batteries**)
IT 14283-07-9, Lithium fluoroborate 21324-40-3, Lithium hexafluorophosphate 25053-12-7, Acrylonitrile-ethyl acrylate **copolymer** 25322-68-3, Poly(ethylene oxide) 28603-63-6, Acrylonitrile-ethyl methacrylate **copolymer** 33454-82-9, Lithium trifluoromethanesulfonate **444816-02-8**
444816-03-9 444816-04-0 444816-05-1
444816-06-2
(compns. of **electrolytes** contg. crosslinked cyclic boroxine polymers for secondary lithium **batteries**)

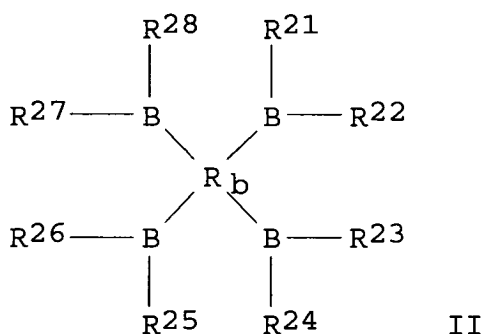
L34 ANSWER 2 OF 14 HCA COPYRIGHT 2003 ACS

134:210595 **Polymer electrolytes, nonaqueous electrolyte** solutions, and electric devices containing the **electrolytes**. Nishiura, Masahito; Kono, Michiyuki; Watanabe, Masayoshi (Dai-Ichi Kogyo Seiyaku Co., Ltd., Japan). PCT Int. Appl. WO 2001018898 A1 20010315, 40 pp. DESIGNATED STATES: W: CA, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP5812 20000828. PRIORITY: JP 1999-248890 19990902; JP 1999-248891 19990902.

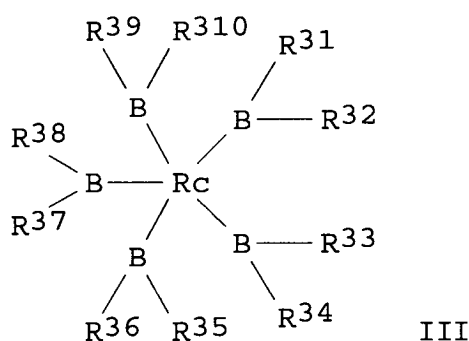
GI



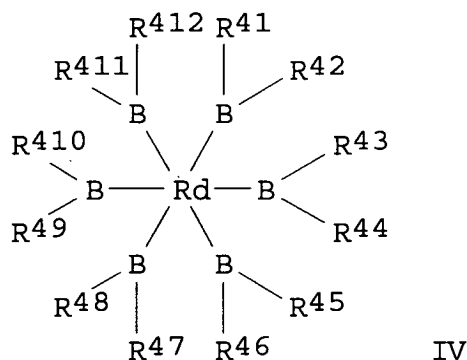
I



II

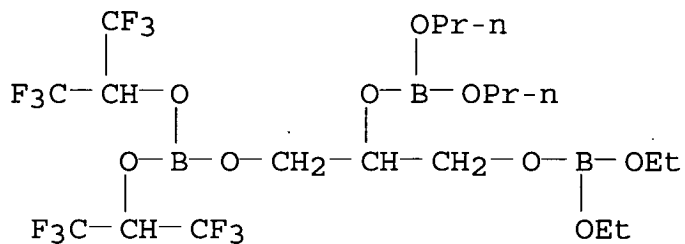


III



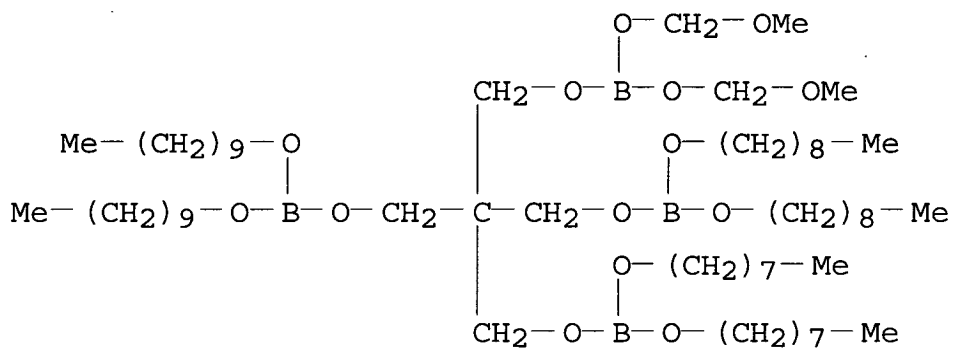
IV

- AB **Polymer electrolytes** contain an **electrolyte salt**, a **polymer** forming a complex with the salt and a B contg. additive selected from I-IV, where R11-412 = H, halogen, a monovalent group, or bonded to another member of R11-412 to form a ring; and Ra, Rb, Rc, and Rd = groups connecting the B contg. parts. The **polymer electrolytes** may contain a **nonaq.** solvent. The **nonaq. electrolyte solns.** has an **electrolyte salt** dissolved in a **nonaq.** solvent and contain the B contg. additive. The elec. devices are **batteries** having the **polymer electrolyte** between a cathode and an anode, and are preferably secondary Li **batteries**.
- IT 328311-64-4 328311-66-6 328311-67-7
(boron compd. additives in **polymer electrolytes** and **nonaq. electrolyte solns.** for secondary lithium **batteries**)
- RN 328311-64-4 HCA
- CN Boric acid (H3BO3), 2-[[bis[2,2,2-trifluoro-1-(trifluoromethyl)ethoxy]boryl]oxy]-1-[[[(diethoxyboryl)oxy]methyl]ethyl dipropyl ester (9CI) (CA INDEX NAME)



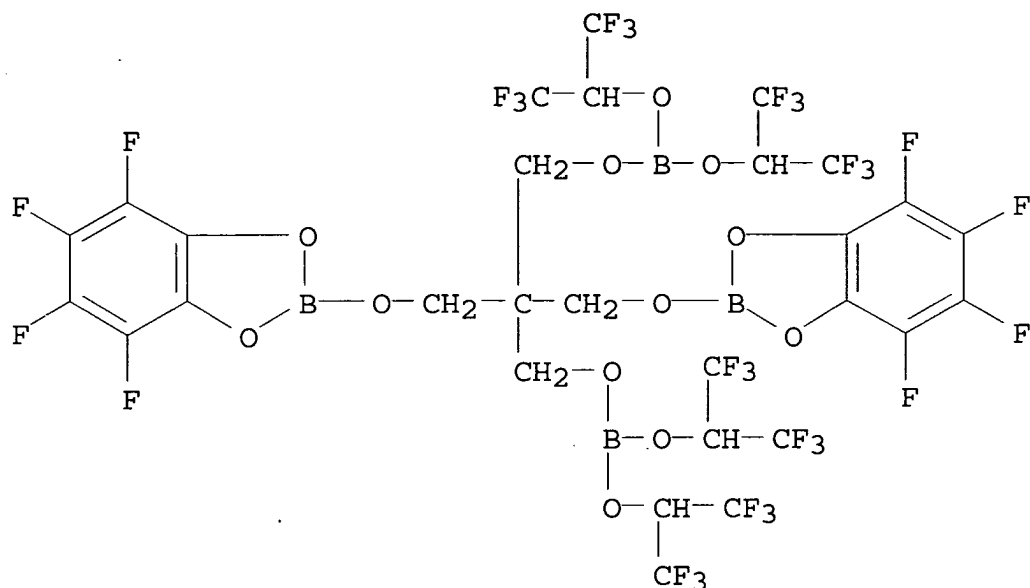
RN 328311-66-6 HCA

CN Boric acid (H₃BO₃), 3-[[bis(decyloxy)boryl]oxy]-2-
 [[bis(methoxymethoxy)boryl]oxy]methyl]-2-
 [[bis(nonyloxy)boryl]oxy]methyl]propyl dioctyl ester (9CI) (CA
 INDEX NAME)



RN 328311-67-7 HCA

CN Boric acid (H₃BO₃), 2,2-bis[[[4,5,6,7-tetrafluoro-1,3,2-
 benzodioxaborol-2-yl]oxy]methyl]-1,3-propanediyl
 tetrakis[2,2,2-trifluoro-1-(trifluoromethyl)ethyl] ester (9CI) (CA
 INDEX NAME)



IC ICM H01M010-40
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST secondary lithium **battery electrolyte** boron compd additive
 IT **Battery electrolytes**
 (polymer electrolytes and nonaq. electrolyte solns. contg. boron compd. additives for secondary lithium **batteries**)
 IT 328311-64-4 328311-65-5 328311-66-6
 328311-67-7 328311-68-8 328311-69-9
 (boron compd. additives in **polymer electrolytes** and **nonaq. electrolyte** solns. for secondary lithium **batteries**)
 IT 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate
 105-58-8, Diethyl carbonate 108-32-7, .Propylene carbonate
 110-71-4 126-33-0, Sulfolane 616-38-6, Dimethyl carbonate
 623-53-0, Ethyl methyl carbonate 646-06-0, 1,3-Dioxolane
 7447-41-8, Lithium chloride, uses 7550-35-8, Lithium bromide
 7789-24-4, Lithium fluoride, uses 7791-03-9, Lithium perchlorate
 10377-51-2, Lithium iodide 14283-07-9, Lithium fluoroborate
 21324-40-3, Lithium hexafluorophosphate 26570-48-9 29935-35-1,
 Lithium hexafluoroarsenate 33454-82-9, Lithium
 trifluoromethanesulfonate 90076-65-6 111804-95-6 132404-42-3
 132843-44-8 152986-27-1 328312-84-1 328312-85-2 328312-86-3
 328312-89-6 328312-90-9 328396-49-2 328396-51-6
 (polymer electrolytes and nonaq. electrolyte solns. contg. boron compd. additives for secondary lithium **batteries**)

132:208862 The use of boroxine rings for the development of high performance **polymer electrolytes**. Mehta, Mary Anne; Fujinami, Tatsuo; Inoue, Satoshi; Matsushita, Kazumi; Miwa, Takashi; Inoue, Takayoshi (Department of Materials Science, Faculty of Engineering, Shizuoka University, Hamamatsu, 432-8561, Japan). *Electrochimica Acta*, 45(8-9), 1175-1180 (English) 2000. CODEN: ELCAAV. ISSN: 0013-4686. Publisher: Elsevier Science Ltd..

AB Boroxine ring contg. additives, Bx(n) = B3O3[O(CH2CH2O)nCH3]3, were found to be compatible with a wide variety of polymer hosts.

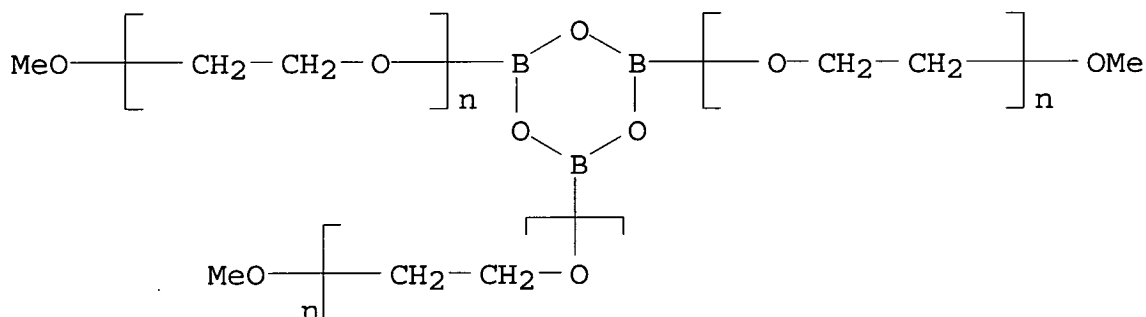
Polymer electrolytes exhibiting room temp. conductivities of up to 10⁻⁵ S cm⁻¹ were obtained by incorporation of Bx(n) and LiCF3SO3 into poly(Me methacrylate) and propylene oxide-ethylene oxide co-polymers. Polymers composed of inter-connecting networks of boroxine rings were also investigated as suitable hosts for the boroxine additives B3O3[O(CH2CH2O)nCH3]3. Poly(Me methacrylate) systems exhibited an electrochem. stability window in the region of 4.9 V, while transference no. measurements indicated high Li⁺ ion cond.

IT 122164-92-5P

(high performance **polymer electrolytes** contg. boroxine rings)

RN 122164-92-5 HCA

CN Poly(oxy-1,2-ethanediyl), .alpha.,.alpha.',.alpha.''-2,4,6-boroxintriyltris[.omega.-methoxy- (9CI) (CA INDEX NAME)



CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 76

ST boroxine ring **polymer electrolyte**

IT Ionic conductivity

Polymer electrolytes

(high performance **polymer electrolytes** contg. boroxine rings)

IT 112-60-7DP, Tetraethylene glycol, reaction products with boron oxide
1303-86-2DP, Boron oxide, reaction products with polyols
9004-74-4DP, Polyethylene glycol monomethyl ether, reaction products with polyol and boron oxide 25791-96-2DP, Polypropylene glycol glycerol ether, reaction products with boron oxide and polyols
122164-92-5P

(high performance **polymer electrolytes** contg. boroxine rings)

IT 9011-14-7, PMMA
(host; high performance **polymer electrolytes**
contg. boroxine rings)

IT 75915-45-6P
(intermediate; high performance **polymer**
electrolytes contg. boroxine rings)

L34 ANSWER 4 OF 14 HCA COPYRIGHT 2003 ACS

131:132303 Secondary **nonaqueous electrolyte**
batteries. Negi, Masayuki (Fuji Photo Film Co., Ltd.,
Japan). Jpn. Kokai Tokkyo Koho JP 11219730 A2 19990810 Heisei, 43
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-22381
19980203.

GI

6,232,021

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

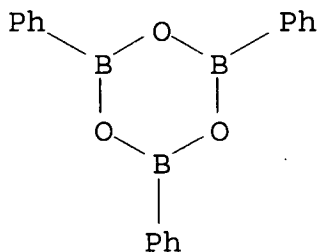
AB The secondary Li **batteries** contain .gtoreq.1 triarylamine
and an org. B compd. The amine may be I (R11, R12, and R13 = H,
alkyl, cycloalkyl, alkoxy, alkenyl, alkynyl, aralkyl, aryl, halogen,
cyano, nitro, HO, formyl, aryloxy, alkylthio, arylthio, acyloxy,
sulfonyloxy, amino, alkylamino, arylamino, carboamido, sulfonamido,
oxycarbonylamino, oxysulfonylamino, urate, acyl, oxycarbonyl,
carbamoyl, sulfonyl, sulfinyl, oxysulfinyl, sulfamoyl, carboxyl acid
group or its salt, sulfonic acid groups or its salt, phosphonic acid
group or its salt, or heterocyclic group, a1, a2, and a3 = 0-5
integer), or II (R21, R22, and R23 have the same definition as R11,
b1 and b2 = 0-4 integer, and b3 = 0-5 integer); and the B compd. is
R31B(R32) (R33) (R31, R32 and R33 = alkyl, cycloalkyl, alkoxy,
aralkyl, aryl, aryloxy, alkylthio, arylthio, acyloxy, sulfonyloxy,
acyl, or oxycarbonyl groups) or III (R41, R42, and R43 have the same
definition as R11, d1, d2, and d3 = 0-5 integer).

IT 3262-89-3 5084-80-0 7294-51-1
218963-16-7 234082-44-1

(triarylamine and org. boron compd. additives for secondary
lithium **batteries**)

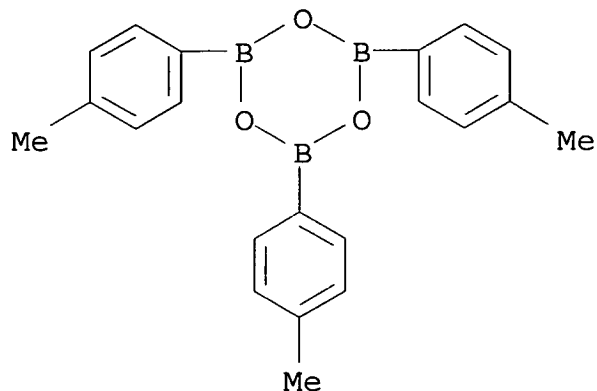
RN 3262-89-3 HCA

CN Boroxin, triphenyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



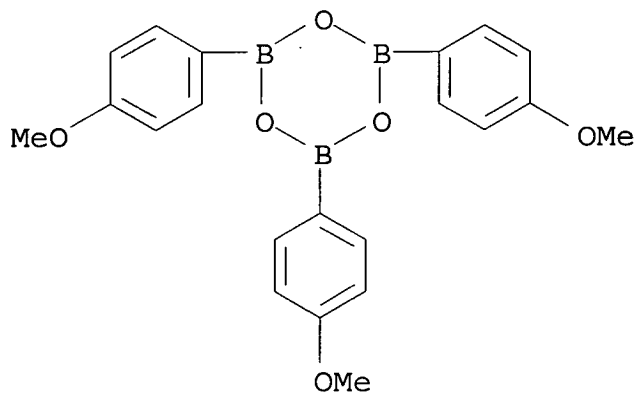
RN 5084-80-0 HCA

CN Boroxin, tris(4-methylphenyl)- (9CI) (CA INDEX NAME)



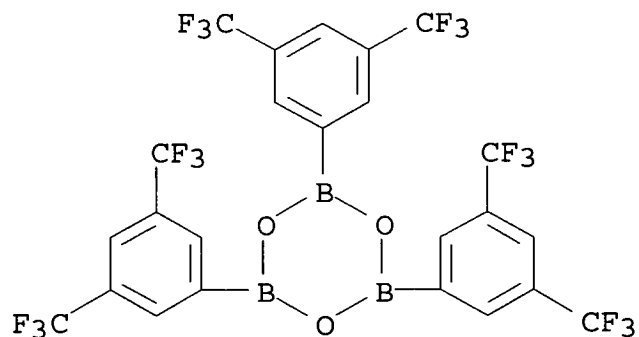
RN 7294-51-1 HCA

CN Boroxin, tris(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



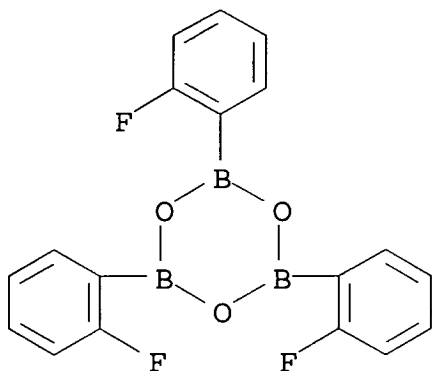
RN 218963-16-7 HCA

CN Boroxin, tris[3,5-bis(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 234082-44-1 HCA

CN Boroxin, tris(2-fluorophenyl)- (9CI) (CA INDEX NAME)



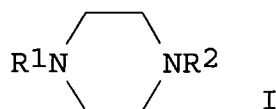
IC ICM H01M010-40
ICS H01M010-40; H01M004-02; H01M004-58; H01M004-62
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium **battery** triarylamine additive; arylamine additive secondary lithium **battery**; org boron compd additive secondary lithium **battery**
IT 7439-93-2, Lithium, uses 7782-42-5, Graphite, uses 191231-18-2 (anodes in secondary lithium **batteries** contg. triarylamine and org. boron compd. additives)
IT 12190-79-3, Cobalt lithium oxide (CoLiO₂) (cathodes contg. triarylamine and org. boron compd. additives for secondary lithium **batteries**)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 14283-07-9, Lithium fluoroborate 21324-40-3, Lithium hexafluorophosphate (electrolytes contg. triarylamine and org. boron compd. additives for secondary lithium **batteries**)
IT 121-43-7, Trimethyl borate 437-25-2 603-34-9, Triphenylamine 960-71-4, Triphenylborane 1095-03-0 1150-62-5 **3262-89-3** 4316-51-2 4316-58-9 **5084-80-0 7294-51-1** 19264-74-5 20441-00-3 36809-32-2 57103-14-7 57103-17-0 204066-03-5 204066-04-6 **218963-16-7 234082-44-1** (triarylamine and org. boron compd. additives for secondary lithium **batteries**)

L34 ANSWER 5 OF 14 HCA COPYRIGHT 2003 ACS

130:327233 Secondary **nonaqueous electrolyte**

batteries. Negoro, Masayuki; Hanaki, Tadayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11121033 A2 19990430 Heisei, 19 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-279246 19971013.

GI



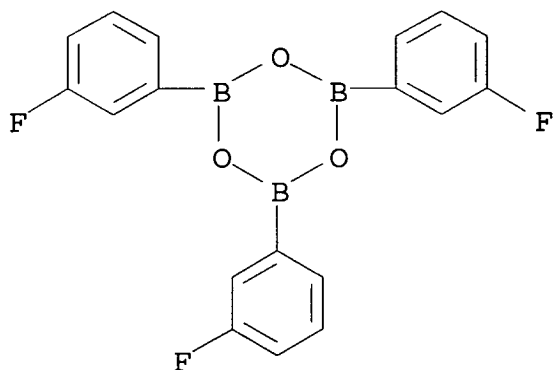
AB The **batteries** use Li intercalating electrodes, Li salt contg. **nonaq. electrolyte** solns., and separators and also contain .gtoreq.1 boroxane compds. The boroxane is preferably I, where R1-3 = H, alkyl, cycloalkyl, alkoxy, alkenyl, alkynyl, aralkyl, aryl, halo, cyano, OH, formyl, aryloxy, alkylthio, arylthio, acyloxy, sulfonyloxy, amino, alkylamino, arylamino, carboamino, sulfoamino, oxycarbonylamino, oxysulfonylamino, ureido, acyl, oxycarbonyl, carbamoyl, sulfonyl, sulfinyl, oxysulfonyl, sulfamoyl, carboxylate, sulfonate, phosphonate, or heterocyclic groups; k, m, and n are integers of 0-5; and R1-3 may join together to form (substituted) rings.

IT 448-53-3 810-66-2 2265-38-5
 3262-89-3 5084-80-0 98468-96-3
 128796-45-2 218963-15-6 218963-16-7
 223440-91-3 223440-93-5 223440-94-6
 223440-95-7 223441-02-9

(**electrolytes** contg. boroxane derivs. for secondary lithium **batteries**)

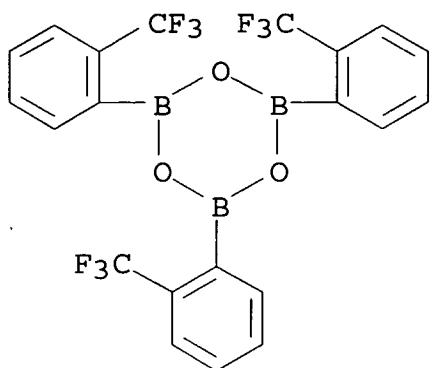
RN 448-53-3 HCA

CN Boroxin, tris(3-fluorophenyl)- (9CI) (CA INDEX NAME)



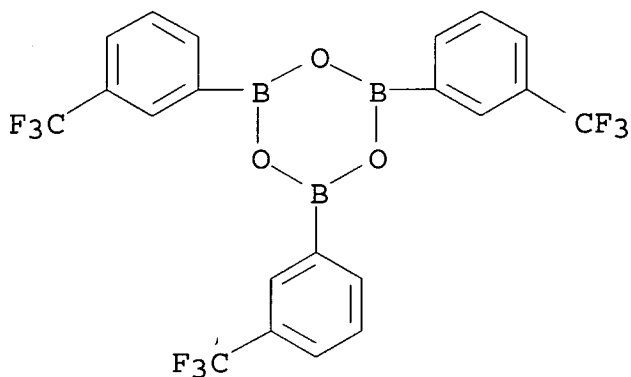
RN 810-66-2 HCA

CN Boroxin, tris[2-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



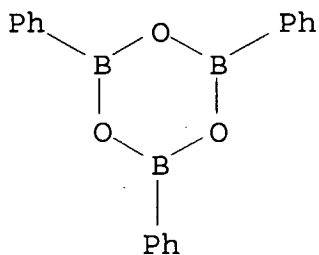
RN 2265-38-5 HCA

CN	Boroxin, tris[3-(trifluoromethyl)phenyl]- (9CI)	(CA INDEX NAME)
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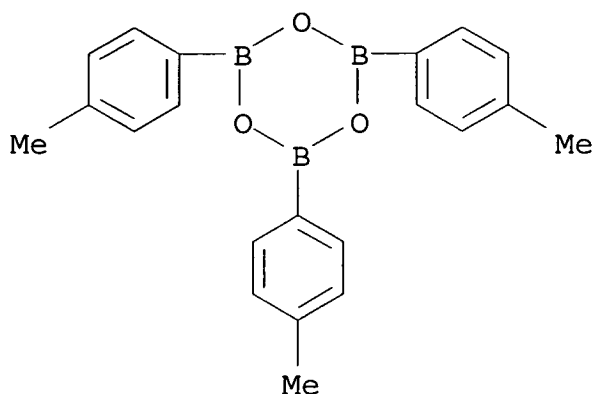
RN 3262-89-3 HCA

CN Boroxin, triphenyl- (6CI, 8CI; 9CI) (CA INDEX NAME)



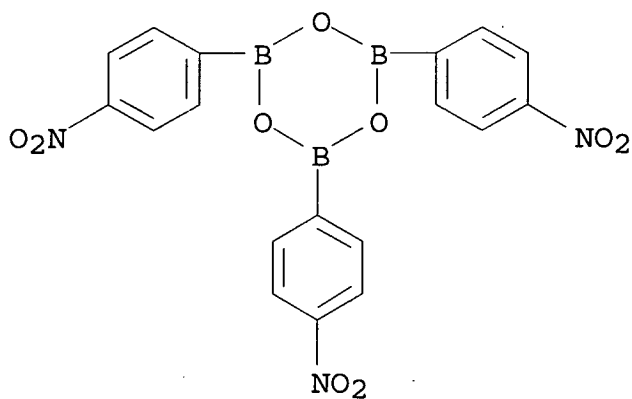
RN 5084-80-0 HCA

CN	Boroxin, tris(4-methylphenyl)- (9CI)	(CA INDEX NAME)
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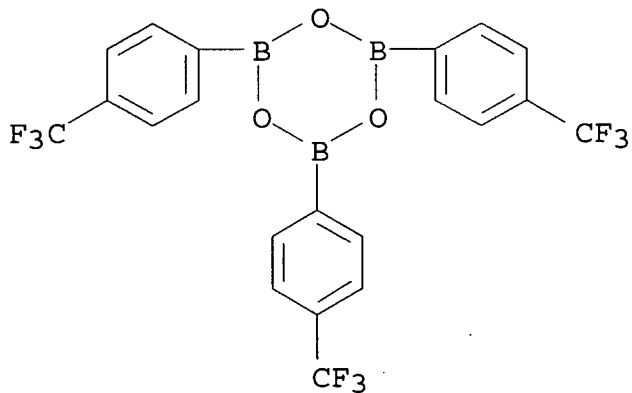
RN 98468-96-3 HCA

CN Boroxin, tris(4-nitrophenyl)- (9CI) (CA INDEX NAME)



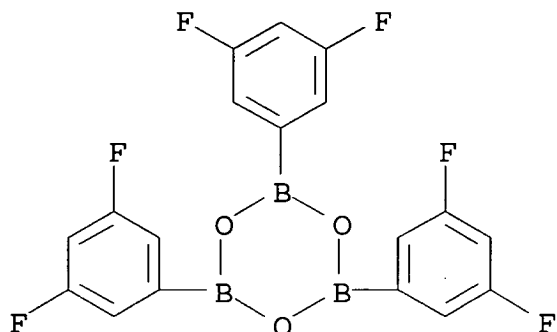
RN 128796-45-2 HCA

CN Boroxin, tris[4-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



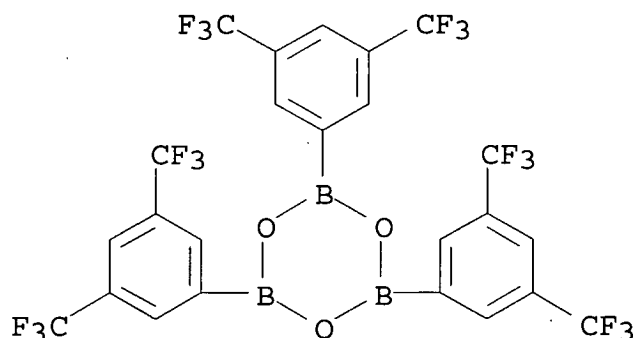
RN 218963-15-6 HCA

CN Boroxin, tris(3,5-difluorophenyl)- (9CI) (CA INDEX NAME)



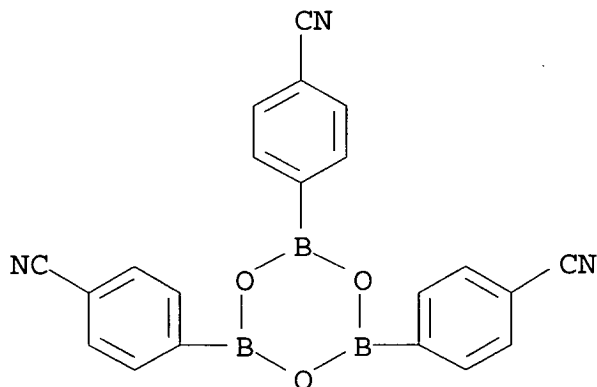
RN 218963-16-7 HCA

CN Boroxin, tris[3,5-bis(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



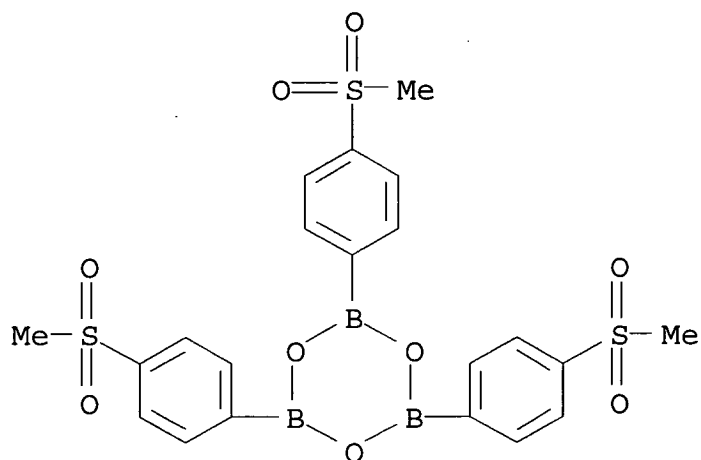
RN 223440-91-3 HCA

CN Benzonitrile, 4,4',4''-(2,4,6-boroxintriyl)tris- (9CI) (CA INDEX NAME)



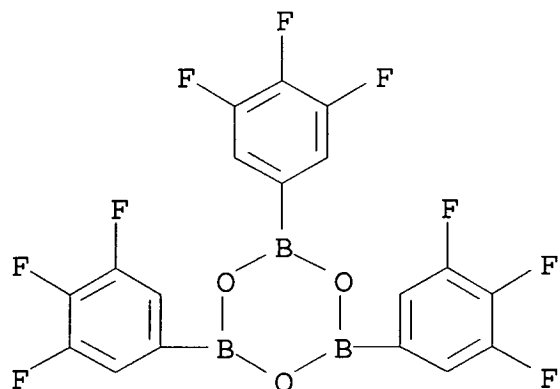
RN 223440-93-5 HCA

CN Boroxin, tris[4-(methylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)



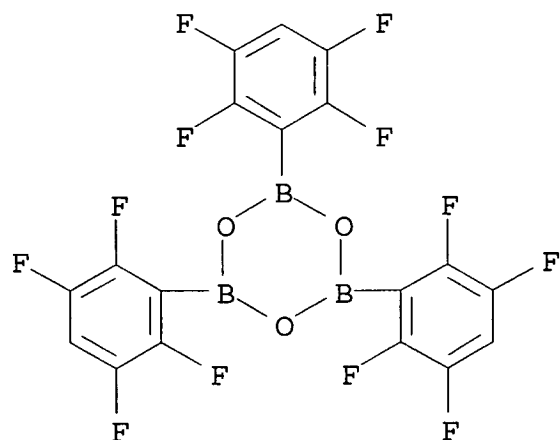
RN 223440-94-6 HCA

CN Boroxin, tris(3,4,5-trifluorophenyl)- (9CI) (CA INDEX NAME)

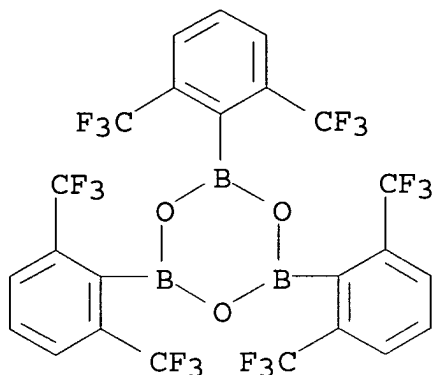


RN 223440-95-7 HCA

CN Boroxin, tris(2,3,5,6-tetrafluorophenyl)- (9CI) (CA INDEX NAME)



RN 223441-02-9 HCA
 CN Boroxin, tris[2,6-bis(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



IC ICM H01M010-40
 ICS H01M004-02; H01M004-58; H01M004-60
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST secondary lithium **battery** boroxane additive
 IT **Battery electrolytes**
 (electrolytes contg. boroxane derivs. for secondary lithium **batteries**)
 IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
 14283-07-9, Lithium fluoroborate
 (electrolytes contg. boroxane derivs. for secondary lithium **batteries**)
 IT 448-53-3 810-66-2 2265-38-5
 3262-89-3 5084-80-0 98468-96-3
 128796-45-2 218963-15-6 218963-16-7
 223440-91-3 223440-93-5 223440-94-6
 223440-95-7 223440-98-0 223441-02-9
 (electrolytes contg. boroxane derivs. for secondary lithium **batteries**)

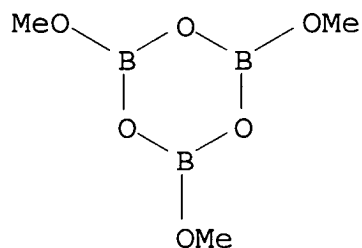
L34 ANSWER 6 OF 14 HCA COPYRIGHT 2003 ACS

130:211761 Boron trifluoride as an **electrolyte** additive for improving cycle life of **nonaqueous** rechargeable lithium **batteries**. Wang, Yu; Zhang, Meijie; Von Sacken, Ulrich; Way, Brian Michael (Moli Energy (1990) Limited, Can.). Eur. Pat. Appl. EP 903798 A1 19990324, 18 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1998-108301 19980507. PRIORITY: CA 1997-2215756 19970918.

AB The loss in delivered capacity (fade rate) after cycling **nonaq.** rechargeable lithium **batteries** can be reduced by incorporating a small amt. of an improved additive in the **battery**. Improved additives include BF₃, HBF₄, or complexes

thereof. The invention is particularly suited to lithium ion **batteries**. Complexes comprising BF₃ and di-Et carbonate or Et Me carbonate can be prepd. which are particularly effective additives. Preferably, the additive is dissolved in the **electrolyte**.

- IT 102-24-9, Trimethoxyboroxine
(boron trifluoride as **electrolyte** additive for improving cycle life of **nonaq.** rechargeable lithium **batteries**)
- RN 102-24-9 HCA
- CN Boroxin, trimethoxy- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



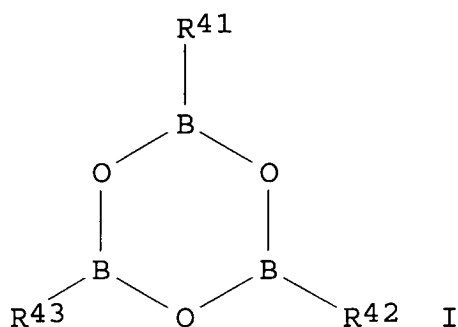
- IC ICM H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST lithium **battery electrolyte** additive boron trifluoride
- IT **Battery electrolytes**
(boron trifluoride as **electrolyte** additive for improving cycle life of **nonaq.** rechargeable lithium **batteries**)
- IT Secondary **batteries**
(lithium; boron trifluoride as **electrolyte** additive for improving cycle life of **nonaq.** rechargeable lithium **batteries**)
- IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
108-32-7, Propylene carbonate 12190-79-3, Cobalt lithium oxide
colio2 21324-40-3, Lithium hexafluorophosphate 39448-96-9,
Graphite lithium
(boron trifluoride as **electrolyte** additive for improving cycle life of **nonaq.** rechargeable lithium **batteries**)
- IT 92-52-4, Biphenyl, uses 109-63-7 7637-07-2, Boron trifluoride,
uses 10345-74-1 13669-76-6 16872-11-0 67969-82-8
220991-85-5
(boron trifluoride as **electrolyte** additive for improving cycle life of **nonaq.** rechargeable lithium **batteries**)
- IT 102-24-9, Trimethoxyboroxine
(boron trifluoride as **electrolyte** additive for improving cycle life of **nonaq.** rechargeable lithium **batteries**)

L34 ANSWER 7 OF 14 HCA COPYRIGHT 2003 ACS

130:127419 Secondary **nonaqueous electrolyte**

batteries. Negoro, Masayuki; Tsukahara, Jiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11003728 A2 19990106 Heisei, 27 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-111344 19980408. PRIORITY: JP 1997-100683 19970417.

GI



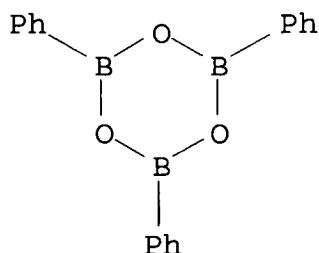
AB The **batteries**, using Li intercalating electrodes and a **nonaq.** Li salt **electrolyte**, contain .gtoreq.1 org. B compd. at a predetd. am. The B compd. is selected from R1B(R2)R3, where R1, R2, and R3 are H, halogen, HO, org. groups contg. or not contg. hetero atoms, etc; (R21)x(X1)kB[(X2)m(R22)y](X3)n(R23)z, where X1, X2, and X3 are hetero atoms other than O and R21, R22, and R23 are H, halogen, HO, org. groups contg. or not contg. hetero atoms, etc; R31OB(OR32)OR33, where R31, R32, and R33 are alkyl or aryl group; I, where R41, R42, and R43 are alkyl or alkoxy group; or Ar1BAr2Ar3, where Ar1, Ar2, and Ar3 are aryl group.

IT 3262-89-3 7294-51-1 218963-15-6
218963-16-7

(boron deriv. additives for secondary lithium **batteries**)

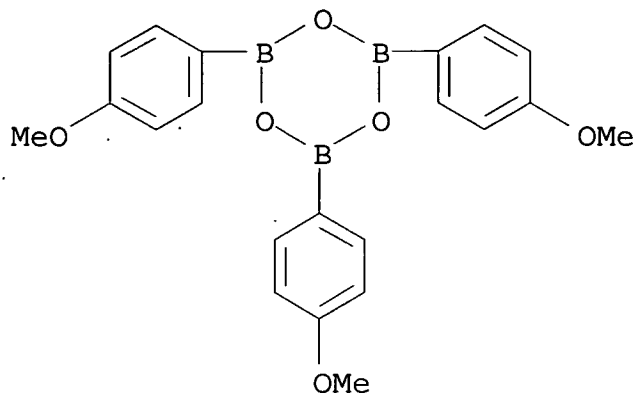
RN 3262-89-3 HCA

CN Boroxin, triphenyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



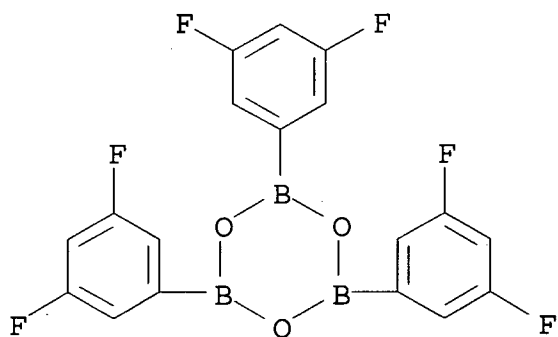
RN 7294-51-1 HCA

CN Boroxin, tris(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



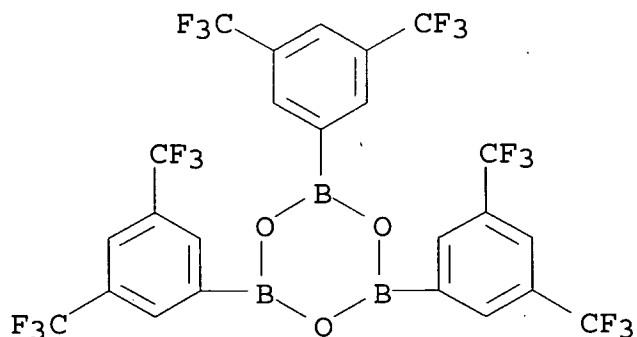
RN 218963-15-6 HCA

CN Boroxin, tris(3,5-difluorophenyl)- (9CI) (CA INDEX NAME)



RN 218963-16-7 HCA

CN Boroxin, tris[3,5-bis(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)

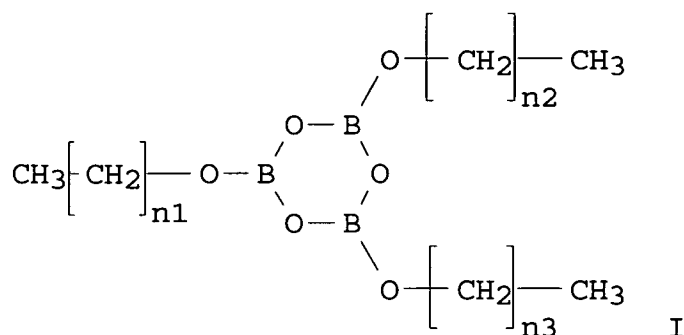


IC ICM H01M010-40

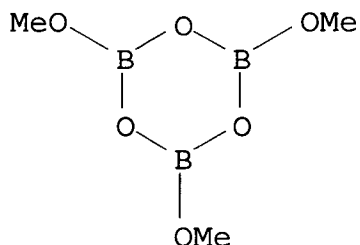
ICS H01M010-40; H01M004-02; H01M004-58; H01M004-60

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium **battery** boron compd
IT **Battery** electrodes
(boron deriv. additives for secondary lithium **batteries**)
IT **Battery electrolytes**
(**electrolytes** contg. boron deriv. additives for
secondary lithium **batteries**)
IT Secondary **batteries**
(lithium; boron deriv. additives for secondary lithium
batteries)
IT 191231-18-2
(anodes contg. boron deriv. additives for secondary lithium
batteries)
IT 121-43-7, Trimethyl borate
(boron deriv. additives for secondary lithium **batteries**)
IT 960-71-4, Triphenylborane 1095-03-0, Phenyl borate 2467-18-7,
Benzyl borate 3262-89-3 4426-24-8 7294-51-1
20905-35-5 72035-41-7 124129-43-7 218963-15-6
218963-16-7
(boron deriv. additives for secondary lithium **batteries**)
IT 12190-79-3, Cobalt lithium oxide (CoLiO₂)
(cathodes contg. boron deriv. additives for secondary lithium
batteries)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
14283-07-9, Lithium fluoroborate 21324-40-3, Lithium
hexafluorophosphate
(**electrolytes** contg. boron deriv. additives for
secondary lithium **batteries**)
L34 ANSWER 8 OF 14 HCA COPYRIGHT 2003 ACS
129:163951 Additives for increasing cycle life of **nonaqueous**
electrolyte secondary lithium **batteries**. Mao,
Huanyu; Von Sacken; Reimers, Jan Ness (Moli Energy 1990 Ltd.,
Japan). Jpn. Kokai Tokkyo Koho JP 10223258 A2 19980821 Heisei, 10
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-19134
19980130. PRIORITY: CA 1997-2196493 19970131.
GI



- AB The additives, for **nonaq. electrolyte batteries** contg. Li intercalating cathodes and Li compd. anodes, are compds. contg. B, O and electrode- and **electrolyte-compatible** org. terminals and contg. .gtoreq.1 (BO)₃ rings. The additive is preferably I, where n₁, n₂, and n₃ are 0 or an integer.
- IT **102-24-9, Trimethoxyboroxine**
(cathodes contg. trimethoxyboroxin for increasing cycle life of **nonaq. electrolyte secondary lithium batteries**)
- RN 102-24-9 HCA
- CN Boroxin, trimethoxy- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- IC ICM H01M010-40
ICS H01M010-40; H01M004-02; H01M004-58
- CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
- ST secondary lithium **battery** boroxine deriv additive
- IT **Battery cathodes**
(cathodes contg. trimethoxyboroxin for increasing cycle life of **nonaq. electrolyte secondary lithium batteries**)
- IT **Secondary batteries**
(lithium; cathodes contg. trimethoxyboroxin for increasing cycle life of **nonaq. electrolyte secondary lithium batteries**)
- IT 12057-17-9, Lithium manganese oxide (LiMn₂O₄) 12190-79-3, Cobalt lithium oxide (CoLiO₂)

(cathodes contg. trimethoxyboroxin for increasing cycle life of **nonaq. electrolyte** secondary lithium **batteries**)

IT 102-24-9, Trimethoxyboroxine
(cathodes contg. trimethoxyboroxin for increasing cycle life of **nonaq. electrolyte** secondary lithium **batteries**)

L34 ANSWER 9 OF 14 HCA COPYRIGHT 2003 ACS

126:49197 Crosslinked poly(vinyl alcohol) separators for alkaline **batteries** and the **batteries**. Nishikitani, Yoshinori; Akita, Seiichi; Ikeda, Hiroyuki; Kuroda, Nobuyuki (Nippon Oil Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08273653 A2 19961018 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-75152 19950331.

AB The separators are poly(vinyl alc.) crosslinking by Na₂B₄O₇ and/or its hydrate. The separators may have the crosslinked polymer sheet bonded to screen structures. The separators have high resistance to **electrolytes** and dendrite formation, and the alk. **batteries** (both primary and secondary) using the separators have high stability and long cycle life in case of secondary **batteries**.

IT 184911-11-3P
(sodium tetraborate crosslinked poly(vinyl alc.) separators for alk. **batteries**)

RN 184911-11-3 HCA

CN Ethenol, polymer with boron sodium oxide (B₄Na₂O₇) (9CI) (CA INDEX NAME)

CM 1

CRN 1330-43-4

CMF B4 Na2 O7

CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 557-75-5

CMF C2 H4 O

H₂C=CH-OH

IC ICM H01M002-16

ICS C08K003-38; C08L029-04; H01M006-04; H01M010-24

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST sodium tetraborate crosslinking agent **battery** separator;
polyvinyl alc crosslinked **battery** separator

IT Primary **battery** separators

Secondary **battery** separators(sodium tetraborate crosslinked poly(vinyl alc.) separators for alk. **batteries**)

IT 184911-11-3P

(sodium tetraborate crosslinked poly(vinyl alc.) separators for alk. **batteries**)

L34 ANSWER 10 OF 14 HCA COPYRIGHT 2003 ACS

125:302253 Sol-gel synthesis, thermal characterization and conductivity of new glass-**polymer** solid **electrolytes**.

Quartarone, Eliana; Tomasi, C.; Mustarelli, P.; Magistris, A. (Dip. Chimica fisica, Univ. Pavia, Pavia, 27100, Italy). Journal of Thermal Analysis, 47(1), 235-245 (English) 1996. CODEN: JTREA9. ISSN: 0368-4466. Publisher: Akademiai Kiado.

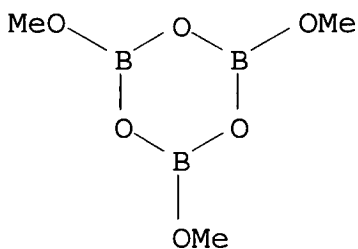
AB A new matrix for solid **electrolytes** was prepd. by mixing Polyox WSR-301 poly(ethylene oxide) (PEO) and a lithium triborate glass ($\text{Li}_2\text{O}:\text{3B}_2\text{O}_3$) obtained by sol-gel synthesis to give PEO-glass molar ratio $n = 8$. The matrix was doped with LiClO_4 or LiBF_4 and the properties of these solid **electrolytes** were discussed in terms of the ratio $n' = \text{O(PEO)}/\text{Li}$ (lithium salt). Thermal and elec. characterization of the **electrolytes** indicated that LiClO_4 behaves better than LiBF_4 in doping the matrix. The perchlorate ion assured an almost complete amorphitization of the matrix structure, at least near the eutectic region, while the fluoroborate ion did not work as well. A LiClO_4 -doped matrix displayed a cond. at room temp. better than $10^{-5} \text{ ohm}^{-1} \text{ cm}^{-1}$, which is high enough to envisage applications in solid-state electrochem. devices.

IT 102-24-9, Trimethoxyboroxine

(reactant; in sol-gel synthesis of lithium triborate glass for prepn. of poly(ethylene oxide) solid **electrolyte**)

RN 102-24-9 HCA

CN Boroxin, trimethoxy- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



CC 37-6 (Plastics Manufacture and Processing)

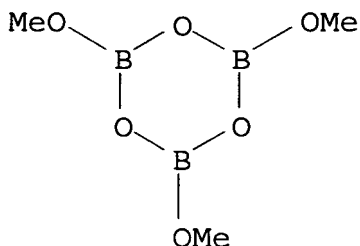
Section cross-reference(s): 52, 57, 76

ST polyoxyethylene lithium borate solid **electrolyte**; sol gel synthesis lithium triborate glass; elec cond glass polyoxyethylene solid **electrolyte**; DSC glass polyoxyethylene solid **electrolyte**

IT Electric conductors, polymeric

(lithium triborate glass-poly(ethylene oxide) solid

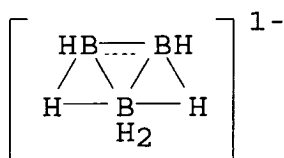
- electrolytes** doped with lithium salts)
IT Electric conductivity and conduction
(of lithium triborate glass-poly(ethylene oxide) solid
electrolytes doped with lithium salts)
- IT Glass, oxide
(lithium borate, composite with poly(ethylene oxide), solid
electrolyte; sol-gel glass synthesis and thermal
characterization and elec. cond. of lithium triborate
glass-poly(ethylene oxide) solid **electrolytes** doped
with lithium salts)
- IT 25322-68-3
(composite with lithium triborate glass, solid
electrolyte; sol-gel glass synthesis and thermal
characterization and elec. cond. of lithium triborate
glass-poly(ethylene oxide) solid **electrolytes** doped
with lithium salts)
- IT 7791-03-9, Lithium perchlorate 14283-07-9, Lithium
tetrafluoroborate
(dopant; thermal characterization and elec. cond. of lithium
triborate glass-poly(ethylene oxide) solid **electrolytes**
doped with lithium salts)
- IT 1303-86-2P, Boron oxide (B₂O₃), preparation
(glass, lithium borate composites with poly(ethylene oxide),
solid **electrolyte**; sol-gel glass synthesis and thermal
characterization and elec. cond. of lithium triborate
glass-poly(ethylene oxide) solid **electrolytes** doped
with lithium salts)
- IT 12057-24-8P, Lithium oxide (Li₂O), preparation
(glass, lithium borate, composite with poly(ethylene oxide),
solid **electrolyte**; sol-gel glass synthesis and thermal
characterization and elec. cond. of lithium triborate
glass-poly(ethylene oxide) solid **electrolytes** doped
with lithium salts)
- IT 102-24-9, Trimethoxyboroxine 865-34-9, Lithium methoxide
(reactant; in sol-gel synthesis of lithium triborate glass for
prepn. of poly(ethylene oxide) solid **electrolyte**)
- L34 ANSWER 11 OF 14 HCA COPYRIGHT 2003 ACS
124:330270 Solid electrolytic capacitors. Tamoi, Koichi (Kansai Nippon
Electric, Japan). Jpn. Kokai Tokkyo Koho JP 08045794 A2 19960216
Heisei, 3 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1994-175169 19940727.
- AB The capacitor has resin packaging made of a multilayer contg.
layer(s) of a fire extinguishing agent.
- IT 102-24-9, Trimethoxyboroxine
(for fire-extinguishing layers in multilayer resin
packaging of solid **electrolytic** capacitors)
- RN 102-24-9 HCA
CN Boroxin, trimethoxy- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



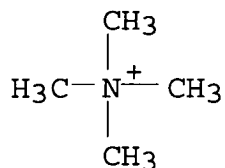
- IC ICM H01G009-08
ICS H01G009-12
ICA C09K021-02; C09K021-14
CC 76-10 (Electric Phenomena)
Section cross-reference(s): 38, 50
IT Asbestos
Fluoropolymers
Glass fibers, uses
(for fire-extinguishing layers in multilayer **resin**
packaging of solid **electrolytic** capacitors)
IT **Polymers**, uses
(multilayer; solid **electrolytic** capacitor packaging
contg. fire-extinguishing agents from)
IT Electric capacitors
(**electrolytic**, solid, multilayer **resin**
packaging contg. layers of fire-extinguishing agents for).
IT 57-13-6, Urea, uses **102-24-9**, Trimethoxyboroxine
144-55-8, Monosodium carbonate, uses 298-14-6, Monopotassium
carbonate 497-19-8, Sodium carbonate, uses 584-08-7, Potassium
carbonate 1344-09-8, Sodium silicate 7722-76-1, Ammonium
dihydrogen phosphate 7783-20-2, Ammonium sulfate, uses
10043-67-1, Aluminum potassium sulfate (AlK(SO₄)₂) 12125-02-9,
Ammonium chloride, uses
(for fire-extinguishing layers in multilayer **resin**
packaging of solid **electrolytic** capacitors)
- L34 ANSWER 12 OF 14 HCA COPYRIGHT 2003 ACS
123:324462 Electrospray mass spectrometry of borane salts: the
electrospray needle as an **electrochemical cell**.
Hop, Cornelis E. C. A.; Saulys, Dovas A.; Gaines, Donald F. (Dep.
Chem., Univ. Wisconsin, Madison, WI, USA). Journal of the American
Society for Mass Spectrometry, 6(9), 860-5 (English) 1995. CODEN:
JAMSEF. ISSN: 1044-0305. Publisher: Elsevier.
AB Two borane salts ([Me₄N][B₃H₈] and Cs[B₃H₈]) were examd. by
electrospray mass spectrometry in the pos. ion mode. Acetonitrile
solns. provided the most informative spectra; the salts exhibited a
remarkable degree of clustering under electrospray conditions, and
virtually all signals corresponded to cationic cluster ions of the
general formula {[cation_m+]_x[anion_n-]_y}(mx-ny)⁺. In contrast,
methanol solns. of these salts produced only B(OCH₃)₄⁻ cluster ions
under otherwise identical conditions. 11B NMR analyses corroborate

the identities of the methanol soln. species that enter the electrospray source and the reaction product generated during the electrospray process.

IT **12386-10-6**
 (electrospray mass spectrometry of borane salts: the electrospray needle as an **electrochem. cell**)
 RN 12386-10-6 HCA
 CN Methanaminium, N,N,N-trimethyl-, octahydrotriborate(1-) (9CI) (CA INDEX NAME)
 CM 1
 CRN 12429-74-2
 CMF B3 H8



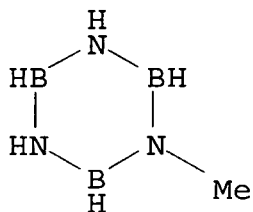
CM 2
 CRN 51-92-3
 CMF C4 H12 N



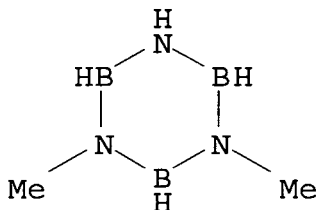
CC **72-3** (Electrochemistry)
 IT **Electrolytic cells**
 (electrospray mass spectrometry of borane salts with electrospray needle as)
 IT Mass spectrometry
 (electrospray-ionization, of borane salts with electrospray needle as **electrochem. cell**)
 IT 12007-45-3 **12386-10-6**
 (electrospray mass spectrometry of borane salts: the electrospray needle as an **electrochem. cell**)

L34 ANSWER 13 OF 14 HCA COPYRIGHT 2003 ACS
 114:165172 **Electrolytic polymerization** of borazole
 or its derivatives for the manufacture of boron nitride film.
 Yamada, Kenji (Mitsubishi Heavy Industries, Ltd., Japan). Jpn.
 Kokai Tokkyo Koho JP 02274898 A2 19901109 Heisei, 2 pp. (Japanese).
 CODEN: JKXXAF. APPLICATION: JP 1989-95373 19890417.

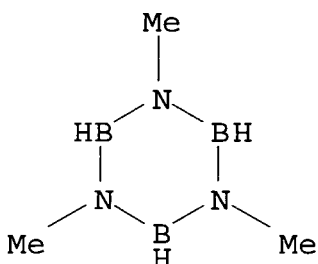
AB Films of BN are deposited on a Pt electrode by polymg. soln. contg.
 0.01-1 M monomer and 0.03-0.3 M supporting electrolytes at temp.
 0-20.degree., c.d. 1-10 mA/cm², and elec. charge 1-5 C/cm³.
 IT **21127-94-6P 23208-28-8P 56687-66-2P**
 (manuf. of, by **electrolytic polymn.**)
 RN 21127-94-6 HCA
 CN Borazine, 1-methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 23208-28-8 HCA
 CN Borazine, 1,3-dimethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 56687-66-2 HCA
 CN Borazine, 1,3,5-trimethyl-, radical ion(1+) (9CI) (CA INDEX NAME)



IC ICM C25D013-08
 CC 35-6 (Chemistry of Synthetic High Polymers)
 ST **electrolytic polymn** borazole; boron nitride film
 prepn polyborazole
 IT 10043-11-5P, Boron nitride, uses and miscellaneous
 (films, manuf. of, by **electrolytic polymn.** of
 borazoles)
 IT 933-18-6P **21127-94-6P 23208-28-8P**
56687-66-2P
 (manuf. of, by **electrolytic polymn.**)

L34 ANSWER 14 OF 14 HCA COPYRIGHT 2003 ACS

113:193493 **Electrolytic** printing using **polymeric** gel

as an ink. Toyama, Noboru; Fukumoto, Hiroshi; Tanioka, Hiroshi; Arahara, Kozo; Koizumi, Norihiko; Yuasa, Toshiya; Kobayashi, Motokazu; Kan, Fumitaka (Japan). Denshi Shashin Gakkaishi, 28(4), 378-82 (Japanese) 1989. CODEN: DSHGDD. ISSN: 0387-916X.

AB Electrolytic printing ink was developed based on a polymeric gel. This polymeric gel ink consisted of poly(vinyl alc.) (I) partially crosslinked with borax, carbon black as a pigment, and water. The gel-sol transition depended on pH and was characterized by viscosity redn. Elec. voltage was chosen to vary pH. When the elec. voltage was applied to the gel ink, an electrochem. reaction occurred on the gel ink so that pH became acidic at the anode and the viscosity of the gel ink was reduced enough to adhere to a paper. Application of rectangular pulse voltage caused the same phenomenon as a const. voltage. Polymeric gel ink with elec. cond. 4.0×10^{-3} .OMEGA.-1 cm-1 was used. The gel ink was coated on the surface of a metal roller. Then an elec. voltage was applied to it by electrodes corresponding to picture elements. An image pattern was formed on the surface of the gel ink and then it was definitively transferred to a paper. When an elec. voltage was not applied to it, the surface did not show any change. Image d. was fully controllable from 0.05 to 1.5 as optical d. by application of an elec. voltage of 3-12 V.

IT 109720-01-6

(gels, for electrolytic printing inks)

RN 109720-01-6 HCA

CN Ethenol, polymer with borax (B4Na2O7.10H2O) (9CI) (CA INDEX NAME)

CM 1

CRN 1303-96-4

CMF B4 Na2 O7 . 10 H2 O

CCI MNS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 557-75-5

CMF C2 H4 O

 $\text{H}_2\text{C}=\text{CH}-\text{OH}$

CC 42-12 (Coatings, Inks, and Related Products)

IT 109720-01-6

(gels, for electrolytic printing inks)